Special Publication 08-10

ADF&G Fisheries Scientific and Technical Report Policies and Procedures

by

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and

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Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
fathom	*spell out*
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm
metric ton	mt (*spell out)*

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
knot	kn
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
ton	*spell out*
yard	yd

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
United States Code	U.S.C.
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour (*spell out for 24-hour time of day*)	h
minute	min
second	s
week	*spell out*
year	*spell out*

Measures (fisheries)

fork length	FL
mid eye to fork	MEF
mid eye to tail fork	METF
standard length	SL
total length	TL

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
chi-square	χ^2
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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The Division of Sport Fish Special Publications series was established in 1991 for the publication of techniques and procedures manuals, informational pamphlets, special subject reports to decision-making bodies, symposia and workshop proceedings, application software documentation, in-house lectures, and other documents that do not fit in another publication series of the Division of Sport Fish. Since 2004, the Division of Commercial Fisheries has also used the same Special Publication series. Special Publications are intended for fishery and other technical professionals. Special Publications are available through the Alaska State Library, Alaska Resources Library and Information Services (ARLIS) and on the Internet: http://www.sf.adfg.state.ak.us/statewide/divreports/html/intersearch.cfm. This publication has undergone editorial and peer review.

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ABSTRACT

This report should be used as a guide for authors, as well as a reference point for report policies and standards. This manual is part of an ongoing effort to provide clear, consistent style guidelines for Alaska Department of Fish and Game Divisions of Sport Fish and Commercial Fisheries technical report series. Presented are guidelines for preparation and assembly of major elements in a report, as well as staff roles and responsibilities.

Key words: reporting guidelines, report policies, guide to authors, citations, references, archives, Fishery Data Series, Fishery Manuscript, Fishery Management Report, Special Publication, Professional Papers, Regional Information Reports, Historical Reports.

INTRODUCTION

The mission of the Alaska Department of Fish and Game (ADF&G) is to protect, maintain, and improve the fish, game, and aquatic plant resources of the state, and manage their use and development in the best interest of the economy and the well-being of the people of the state, consistent with the sustained yield principle. The Department and the Divisions of Sport Fish and Commercial Fisheries believe that reporting results of its fisheries research and fisheries management in an accurate and timely manner is an important step in fulfilling that mission (Hicks et al. 1999; Mills et al. 1995; Wilbur et al. 1992). To that end, the Divisions of Sport Fish and Commercial Fisheries have jointly established a report series for widespread publication of technical and scientific information.

Fishery Manuscripts, Fishery Data Series, Special Publications, Fishery Management Reports, and Regional Information Reports are reports in the joint-divisional series. Each report represents a distinct type of information. The Division of Sport Fish established the first four reports in 1991 as a divisional series. The Division of Commercial Fisheries began publishing in the series in 2004 and added Regional Information Reports to the series. This Special Publication is a joint effort by the two divisions to establish a common set of rules and guidelines.

The technical report series has been designed to strengthen positive interaction with the public, other agencies and fishery professionals. The series are designed to provide an archive of information that is technically and scientifically sound and to enhance content through recognizable and consistent style guidelines.

REPORTING POLICIES

The Divisions of Sport Fish and Commercial Fisheries have established the following specific policies governing their joint reporting process:

- Report all data collected at public expense for fisheries research and management in one of the technical fisheries reporting series established by the divisions.
- Any report to be published within the Fishery Data Series or Fishery Manuscript Series will have statewide scientific peer review.
- Each project in which parameters are estimated, or a hypothesis tested will have biometric review.
- All reports will have regional technical and scientific review.
- Any manuscript that is to be submitted to societies, agencies, or organizations for publication outside the joint-divisional series will have approval by appropriate division director (or their designee).

ROLES AND RESPONSIBILITIES

STATEWIDE REPORTING EDITOR

The statewide reporting editor for the joint-divisional series is the supervisor (or his/her designee) of the Research and Technical Services (RTS) Section within the Division of Sport Fish. The statewide editor is responsible for; accepting manuscripts from regional research and regional management coordinators for the Divisions of Commercial Fisheries and the Division of Sport Fish (joint-divisions); for coordinating scientific peer review; for working with senior authors and coordinators to incorporate edits into manuscripts; and for disseminating final copies of reports to regions, libraries, and web sites. Reporting policies are established and maintained under the direction of the editor.

REGIONAL RESEARCH AND REGIONAL MANAGEMENT SUPERVISORS

Regional research and management supervisors are responsible for reporting results of research projects in their region. Regional management supervisors (or their designees) are responsible for reporting results of fisheries management in their region. The supervisors determine the senior author for a report, establish the workflow for preparation of that report, and designate a report to the appropriate series; Fishery Manuscripts (FMS), Fishery Data Series Reports (FDS), Special Publications (SP), Regional Information Reports (RIR), or manuscripts for publication outside the department (Professional Papers). The regional research supervisors and regional management supervisor jointly with biometric staff determine when biometric review is necessary, and coordinate that review. The supervisors arrange regional editorial review for all reports. They determine when statewide review is required and submit appropriate reports to the statewide reporting editor for scientific review. They submit all final reports to the statewide editor for final publication. They verify and provide specific funding information required by partner agencies and organizations, including project numbers.

SENIOR AUTHOR

A senior author writes and revises draft and final manuscripts, and selects and directs the report-related activities of coauthors. The author of RTS series reports must be identified (not merely listed as the ADF&G); this senior author is responsible for the integrity of the work. Usually senior authors have been involved with the planning and execution of the research projects or fisheries management being reported. Senior authors work closely with coauthors, regional research or regional management supervisors, and publications staff to ensure compliance with guidelines for publishing in the joint-divisional series.

COAUTHOR

Coauthors must be directly and significantly involved in writing the report, and in planning, conducting and implementing the data gathering, or in data processing and analysis. Other coworkers should be identified in the acknowledgment section. The primary author must have approval of the coauthor before including their names on the title page.

BIOMETRICIAN

Biometricians review projects for statistical accuracy and consistency. They see that the project background supports the study. Biometricians ensure that project objectives are clearly defined. They see that the study is designed to gather the information needed to meet the objectives, and that statistically valid methods for data collection, including sampling designs and sampling

levels, are addressed. They see that methods for data reduction and analysis are correct, and adequate to meet project objectives.

PUBLICATIONS STAFF

Regional publications staff ensures that published reports follow joint division style guidelines. Publications staff assists authors in using templates and in applying division style guidelines at various stages of the author's report preparation. Regional publication staff performs final editorial review of reports, correcting grammar and sentence structure, and checking table and figure references and citations. They help assemble reports, train authors in software applications, and ensure that citations are complete and correct.

Statewide publication staff in RTS performs the final typesetting and creates Adobe Portable Document Format (PDF) files for web posting. They coordinate final publication and distribution of final reports. They maintain storage of archived final reports.

REVIEWER

Reviewers provide scientific peer review for reports. Scientific peer review means a judgment-based critique of the quality of the evidence, the quality of the presentation, the quality of the reasoning and logic, and the integrity of the conclusions. Scientific peer review can include a critique of the writing style, the punctuation and grammar, or other writing conventions, but scientific peer review should be largely focused on the quality of the reasoning and logic, the quality of the evidence and support for conclusions, and the flow and progression of the writing up to a statement about what was learned by doing the study. Usually, reviewers are chosen from among the biologists, biometricians, geneticists, scientists, engineers, and limnologists within the department regardless of region, duty station, or division. On occasion individuals outside the department with specialized knowledge can be asked to provide peer review.

WEBMASTER

Divisional webmasters plan, develop and maintain publication pages for the Division of Sport Fish and the Division of Commercial Fisheries. They create web links, and establish protocols by which publications are posted. Webmasters update lists of external publications.

PUBLICATION PROCESS

DRAFT

All reports prepared by joint divisions shall be submitted as a contribution to one of the 6 established series (FDS, FMR, FMS, SP, RIR, or Professional Papers). All statewide publications, with the exception of the RIR, are required to undergo formal scientific review by peers. Regional research supervisors or regional management supervisors designate the author for the project report and will coordinate regional and biometric review, and the writing and revision of the manuscript. For reports requiring a statewide review, supervisors submit the draft report to the RTS reporting editor accompanied by a cover memorandum that identifies:

- Issues specific to project funding
- The series in which the report should be published
- All persons who have previously reviewed the document

A draft provided for statewide review is not required to have references, table placement, page numbers, and table of contents in final format, however all tables, figures and appendices should be provided.

REVIEW

All reports receive regional review, coordinated by regional research and regional management supervisors. For reports receiving statewide review, the RTS reporting editor chooses and notifies a reviewer that a review is assigned. Unless the reviewer signs the review, the identify of the reviewer is not revealed to authors. For statewide reviews, suggested edits can be submitted electronically or written on a printed copy of the report. Reviews focus primarily on report logic and content; references, table placement, page numbers, and table of contents are frequently in preliminary format at this stage. A sample checklist for peer review of a Fishery Data Series report is attached (Figure 1).

Example Peer Review Checklist for Fishery Data Series Reports

1. Abstract identifies purpose of investigation, provides short and concise generic description of methods used, and highlights significant results
2. Introduction provides the reader with a clear understanding of the reason for the study and orients the reader with background information
3. An objective section is included for all Fishery Data Series reports
4. Methods and results sections provide consistent language, and address project objectives
5. Methods are clearly defined, and enough detail is provided
6. Results are clearly stated and supported by the data
7. Results are presented without interpretation
8. Discussion, conclusions, and recommendations are supported by the content of the report
9. Language and presentation are clear
10. Overall organization within each section is logical
11. Sentence structure and spelling are correct
12. Table and figure presentations provide good tools for comparison
13. Titles and column headings adequately explain table elements
14. Citation is provided for information compiled from other sources
15. Scope of the report is appropriate to its purpose

Note: If writing errors of a technical nature are detected, it is always helpful to note those, but there is no need to spend a lot of time correcting page numbers, references, table and text concurrence, language irregularities, hyphenation or compound word errors, captions, lists, or table of contents. These elements are considered preliminary in reports submitted at the draft stage, and will be addressed by editing staff.

Figure 1.–Example peer review checklist.

FINAL REPORT

Regional research and management supervisors, authors and regional publication staff complete the report, incorporating all review comments determined appropriate. The report is then submitted to the statewide RTS reporting editor in printed and in electronic format, together with all files required to print the entire report.

After reviewing the final document to ensure that publication guidelines have been met, the RTS editor will assign a report number and print the requested number of reports. The print request from the region will include a budget code to cover cost of publication for author copies. The RTS editor provides copies of each publication to the State of Alaska Library and to Alaska Resources Library and Information Services (ARLIS), per State of Alaska policy.

SECTIONS OF A REPORT

PRELIMINARY PAGES

Each report begins with a uniform preliminary page sequence of four pages, beginning with the cover page. The cover page identifies the report title, series and authorship. It is followed by the symbols and abbreviations list. The title page, which follows, identifies the job number for Federal Aid projects. The final page in the titling sequence describes the report series, contains the document citation, and displays the Office of Equal Opportunity nondiscrimination clause.

TABLE OF CONTENTS AND LISTS

The table of contents and lists will be built from styles. Publications staff will assist with preparation and formatting the final table of contents. If the report text is formatted to the appropriate heading styles, the table of contents will be automatically generated. For table and appendix titles, use the *Insert>Caption* feature in Word[1]; this will enable automatic generation of lists as well as easy movement of elements within a document.

ABSTRACT

The author should state in the abstract the essential purpose and relevant findings of the research. Abstracts are written in summary form, emphasizing the main conclusions and only providing enough details of methods and results to understand the study. The abstract should be less than 300 words. An abstract must be able to stand by itself; references cited, subheadings, references to tables and figures, and footnotes are not allowed in abstracts. Acronyms and abbreviations must be spelled out, and are seldom included in an abstract.

KEY WORDS

Key words should always identify the study background (type, species, area and methods). Key words across multi-year studies should be consistent, to enable searches for a specific study across years. Accommodate anticipated searches for reports; this might mean including "Yakutat" in a key word list for East Alsek-Doame River or "AMR" in an Area Management Report.

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[1] Throughout this document specific software products are described. These specific product titles are included because they are established standards for State of Alaska and do not constitute product endorsements.

INTRODUCTION

The introduction is the place to state the reason, scope, and objectives of the study and how results would be useful. The introduction should also include a statement of any federal contract objectives addressed and orient the reader with background information. Generally, the introduction should start with a review of the history of the problem under consideration and build up to some kind of statement about what the reader should expect to learn in the discussion section of the paper. Every paper must have an introduction.

Objectives

An objectives section is required for all FDS reports. It is helpful (particularly for FDS reports that present results for a discrete project) that objectives be worded the same as in operational plans, funding documents and project synopses. This will help track fulfillment of commitments and tie all project documentation together.

METHODS

All data-collection and data-analysis methods, including equations, should be presented or cited in this section; data-reduction methods are optional. All components of your work that produced the results reported should be explained. Appendices may be used to present important supportive information, such as survey questionnaires or other data collection forms. If previously published methods are cited, the author should provide sufficient information to preclude reliance on the original source to understand the study. Fishery Data Series reports are written with the standard methods and results format, while reports that synthesize information from many other studies, studies that define a problem and suggest a course of action, and management reports, do not support in this format.

RESULTS

The combination of text, tables, figures and appendices present the results achieved. Generally, tables should be used to document exact numeric values, while figures may be useful in depicting general trends or relationships in the data. The text is used to lead the reader through the results, to document information that does not lend itself to tables and figures, and to highlight the major findings. Avoid the presentation of data that is not directly applicable to the purpose and objectives of the investigations.

Some text description of tables and figures is required so that the reader understands the major findings presented in the tables or figures. Avoid repeating the same numbers in text that are presented in tables; instead use text for significant findings from the data that is presented in tables. Use tables and figures to make a point and to describe relationships advanced by the data.

Inappropriate table or figure references:

> Table 15 summarizes harvest of sockeye salmon
>
> See Figure 5 for escapement data
>
> Table 7 summarizes survey responses

Appropriate table or figure references:

> The number of sockeye salmon harvested increased in 1999 over the previous year (Table 15)
>
> This is the fourth year in a row that escapement fell below the escapement goal (Figure 5)
>
> Respondents reported record catch of sockeye salmon in the Kasilof gillnet opening (Table 7)

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

The discussion section (and possibly a separate conclusions or recommendations sections) should contain a logical statement about what the authors learned by doing the study. There is no way to write a good discussion without a judgment-based conclusion on the author's part—but the author must offer support for those conclusions. The support can come from an interpretation of the author's own results or from previously published studies or other authorities. Avoid restatement of results and previously discussed literature. Instead use the discussion section to interpret findings, relate the findings to other studies, and explain how the findings should be applied. Address to what extent objectives were obtained and how the work should influence further investigations. This section is required for Fishery Manuscripts. In other series reports, brief discussions may be appropriately combined in a results and discussion section.

Some authors use the discussion to focus mainly on interpretation, and then include a separate conclusions section as a concise statement of the main points covered by the report. The conclusion section is optional for all division reports. Individual conclusions should be succinctly stated without discussion. Conclusions need not be limited to your investigation but may represent a synthesis of your work with other cited publications.

Recommendations, if numerous, complex, or meriting special emphasis, can occupy a separate section. However, as with conclusions, this section is optional and can be combined with the conclusions section.

ACKNOWLEDGMENTS

Authors in the acknowledgment section recognize in simple prose the contributions of people involved in the research or publication process. Funding sources, including Federal Aid, should be noted in this section. Most projects rely on support from many levels of staff, outside agencies, user groups, contracted staff, and the fishing public. These important partnerships should be acknowledged.

REFERENCES CITED

All formal references mentioned in the text, tables, figures, and appendices must be listed in the references cited section, using the Harvard system (author and year). Personal communications, unpublished data, and sources not available to the reader should not appear here, but rather these should be included parenthetically within the text. These parenthetic citations should contain enough detail so that the reader will know exactly what evidence the author is offering: e.g., "(personal communication, Andy Piston, ADF&G fisheries biologist, Ketchikan Alaska), "… this problem seems to have been identified as early as 1940 (unpublished Bureau of Fisheries manuscript obtained from Jack Helle, Auke Bay Fisheries Lab, Juneau Alaska)," or " (from the unpublished 1994 proceedings of the 16th Northeast Pacific Pink and Chum Workshop)."

APPENDICES

The appendices should provide the reader with a source of additional useful information relevant to the project objectives, although not central to the analysis or discussion. The appendix is not a place to store information or data that may be of interest to the project staff but are of limited value to the report study. Each appendix should have a cover page, including an explanatory title for the content within the appendix. Appendix information should then be grouped within these titles, to provide organizational integrity.

The goal of technical reports is to present information in a clear and accessible format, and this goal extends to appendices as well as the report body. The appendices should be grouped in logical units represented by alphanumeric identification (e.g., Appendix C). The tables and figures within such units are sub-identified with numbers (e.g., Appendix C3).

TEMPLATES

The purpose of templates is to make the process of writing and formatting fisheries documents easier and more consistent. The templates provide fields and links that carry over to our Internet-ready documents. Built in coding includes styles, page and paragraph settings, heading and page numbering. The templates are required for use by authors of technical series reports, and are available in either one-column or two-column format. While composing the report, use the styles provided for text.

TEXT FORMATTING GUIDELINES

Report text will be prepared using the State of Alaska Information Technology standard program for Word Processing, currently Microsoft Word. Page setup is preconfigured by the joint divisional report template: text is placed on the page in one-column or two-column format, justified, with margins set at 1 inch all around. Headers are set at 0.5 inch and footers are set at 0.4-inch. Columns are set at 3.1-inch columns for the 2-column format. The normal font size is 12-point Times New Roman for single column, and 11-point Times New Roman for 2-column reports. The minimum point size allowed for tables or text is 9 point Times New Roman, or 8-point Arial. Except where specifically allowed or required by other division style standards, use of italic, bold, and bold italic styles is kept to a minimum in text.

The headings in the report provide the structure for the text. When headings are viewed as a whole, they should cover all aspects of the report. The headings should be balanced between topics within a report. Parallel structure should be provided by headings to parallel information.

Pagination

The preliminary pages of a report will not be numbered. The Table of Contents and List pages will be numbered in Roman numeral style. The first page of text, and all subsequent pages, will be numbered sequentially in Arabic numbers. Final reports submitted should include any blank numbered pages necessary to ensure that single-to-double-sided copying will result in the right-facing orientation of the following pages; the first page of the table of contents, the abstract, and the cover page for each appendix.

Portrait page numbers are centered horizontally, and placed 0.4 inch from the bottom of a page. Landscape page numbers are centered vertically, and are placed 0.4 inch from the left side of the page, with text direction facing set to vertical, facing the outside edge of the page.

Vertical Lists and Bulleted Text

Simple lists of 3 or less items are generally better presented in text, unless the list format is used to provide emphasis. Either numbers or letters can be used to introduce parts of a run in list; either choice must be enclosed in parenthesis, and items are separated by a comma (however, if internal punctuation within a list requires a comma, the listed items must be separated by a semicolon).

When bulleted text is used throughout a document, the format must be consistent between similar lists. Numbers, letters, or bullets may be chosen to designate different items of a list, and the choice will determine how the list is presented. Introduce the list with a sentence or phrase followed by a colon. If items are introduced by a number or a letter, the number or letter is followed by a period, and each item begins with a capital letter. If items carry over to a second line, the second, and all subsequent lines are indented to be flush with the first item, and vertical space separates each item in the list.

Items in the list do not have any closing punctuation unless they consist of a complete sentence. When a full sentence structure is chosen, items in the list are followed by a semicolon, and the list closes with a period (CMS 2003).

TABLES

The following explanation of table presentation is from the Council of Science Editors (CSE 2006):

Clear, easy-to-read tables are seldom easy to design, and tables can be the most difficult and time-consuming part of a manuscript to edit…Although the basic components of a table can be described and explained…the design and editing of a table often call for creativity rather than rigid application of rules.

Journals and governmental scientific publications typically develop style guidelines for tables, and those style guidelines apply the same look, readability, and consistency that style guidelines provide to text. Because a prime virtue of tables is easy comparison, consistency in style is indispensable both within one table and among several. Styles are applied for title elements, including column heads, horizontal rules, abbreviations, and footnotes, and number alignment.

TABLE DESIGN AND FUNCTION

Tables are designed to present precise, mathematically verifiable numerical values, and give accurate individual values to document information presented in text. A table is used to present large quantities of individual, similar data, so that they are easy to scan and compare. Tables presenting similar types of information should have parallel formats. The text of the report, or a figure, will report trends or summaries of tabular information, but should not duplicate the table. Tables and Figures must be numbered, and should appear in the order in which they are introduced in the text.

A table should be fully complete, logical, and understandable on its own. Necessary background information, sources for the information provided, and tools necessary for interpretation must be provided, either as table notes or within the table title. Abbreviations used within the tables must be understandable and if not standard provided in the notes or in the title

If a table contains too many columns to fit within page margins using readable font sizes it is the author's responsibility to redesign the table so that it does fit. Simple tables are generally more effective than complex ones. A table should deal with a single subject, or bring together related information for comparison. Several small tables are generally more effective than one overly complex one. If a table width doesn't fit a single page, it is a good indication that the table is combining too much information, and presentation of the data needs to be redesigned. A published table is not a presentation of raw data; it should be an organized statement of what the data represents or informs.

A simple list or other tabular matter that requires only two columns or less than 4 rows can usually be left unnumbered and untitled within the text, unless it must be referred to elsewhere in the document.

Table Titles

Our reports include a list of tables as part of the front material. These lists are scanned by readers in search of the table that for them anchors the report. It is easy to forget that in our careful description of a project, many readers are just looking for how a fishery performed in the past year, and they know the table that will give them that synopsis. Therefore, the title should identify the table as clearly as possible, commentary, and background information can often be provided in the notes. Series of similar tables should provide similar titles. The titling should be consistent between the origin files and the final Word document for archival purposes. List information applying to the table as a whole (including units) in a source or general note, and avoid footnoted titles.

Every table should be given a number and should be cited consecutively in the text by the number. Tables are titled in sentence-style capitalization, with only the first word in a title and proper names capitalized, and are followed by a period. The style for all elements of the table title is non-bold. The table title first line is indented .2 inch, and the title is then justified to the width of the table.

Column Headings

Capitalization of column headings is formatted to sentence style. If the first "word" in a column head is a symbol, then the following word is capitalized. A column heading should be a word or short phrase, and include the unit symbol if appropriate. Use abbreviations, symbols and other short forms when necessary to conserve space, with an explanation either in a footnote or in the table title. If the column displays percentages or currency, putting the unit of measurement in the heading allows a better presentation of the data than individually labeling each entry.

The left-hand column of the table is a vertical listing of the categories about which information is given in the adjacent rows. Main entries in this column are always aligned on the left. Subentries are indented under the more general titles, and are also aligned on the left.

Column headings are normally centered on the longest cell entry. If the latter is unusually long, adjustment may be necessary because the heads should *look* right. The final rule is clarity; there should never be ambiguity as to which data applies to which heading.

Numerals in columns displaying like data are aligned at the comma, or the decimal point, and ranged right. A column including different kinds of numerals (e.g. ranges, percentages, standard errors, totals) are aligned on the numerals used most frequently, with the other numbers centered. En dashes are centered. When rounding results in an inaccurate total to the columnar data, a footnote is recommended to explain the apparent discrepancy.

Common elements of adjacent columns can be gathered into a common heading, or a spanner. Spanner headings carry a horizontal rule, displaying to which columns the head applies. Spanner headings should always be separated by an unruled space, to make the separation in the data apparent.

The word total in the final row is indented or, when there are space constraints, typographically distinguished, to differentiate it from the items listed above. Because the expectation is for the

final row in a column of historical data to present totals, bold text is seldom appropriate, and italic numbers are never allowed. A horizontal rule borders the table at its top and bottom, and separates the title row from table data. Horizontal rules will be set at ½ point. Omit unnecessary rules (they are unnecessary and distract from the data) and vertical rules are seldom necessary.

Table Footnotes

Table footnotes fall into three general categories:

1. Source notes: *Source* notes, including credit lines, take precedence and are placed directly below the lower table border. *Source* notes are an acknowledgment of data, or explanation of how the data was obtained. They are introduced by an italicized *Source.*
2. Notes that apply to the whole table, including notes of significance level: These notes follow *Source* notes, precede the footnotes, and are introduced by an italicized *Note*. Avoid footnoted titles and parenthetical text, instead include a general note. Nonstandard abbreviations should be defined as a table note.
3. Specific notes: These apply to specific parts of the table. They are designated by a superscript alphabetic character and follow *Notes*. Specific notes are assigned characters alphabetically by the order in which they appear in the table, reading the table in the same order you would text (across the row, down to the next row, across that row, etc.) These footnotes must appear in the correct sequence and all markers must bear an accompanying footnote. Footnotes references should appear to the right of an entry, and not disrupt the alignment of numbers in a column. A footnote in the column heading applies to all the values in the column, a footnote in a row heading applies to the entire row, and footnotes in cells apply to that cell only. A single footnote can append to several elements.

Footnote text is set below the bottom table border, using the "table footnote" style from the template. The footnote should never extend beyond the table margin. Font size for table footnotes will need to be manually adjusted and is ideally one point size smaller than table body text, but in minimum font size tables matches the font size for body of the table.

Blank Cells

A table may have empty cells, cells for which the author has no information to present. When values would logically be expected in cells for which data are unavailable, No Data can be designated by ND without footnote or by an en-dash (–) with an explanation. The abbreviation ND should be used when no attempts were made to collect it. Use an en-dash (–) when the value can't be computed due to limitations of the data. Avoid using similar abbreviations with different meanings in the same table (e.g., ND = not detectable; ND = no data).

If a cell is blank for an obvious reason, that cell can simply be left blank. If there is more than one reason for a blank cell, the cell will contain an en-dash (–) and the footnoted letter, rather than a floating footnote designation. Do not substitute "0" for no data presented; "0" should only be used when a measured value is 0 (e.g. if 0 fish were age-4).

Appendix Tables

Tables in the appendices will be assigned an appendix number for reference purposes, and will appear in the lists as part of its appendix. Tables that supply supplemental information are more appropriately treated as appendix tables. Appendix tables do not require an in-text reference. The

text can refer to the properly titled appendix as a whole, or refer to individual appendices, without regard to consecutive order.

Table Placement in Reports

In the final report, tables are generally placed after their first text citation, in numerical order. Simple tables are ideally placed within the text, rather than occupying a separate page. This style will help minimize disruption to the flow of the text, and provide the best concurrence of text and illustration. More involved presentations will occupy a dedicated page after the text reference, preferably at the top of the next page.

In reports where the data largely stands alone, or there are many tables in relation to the text, a table section may be appropriate. The choice of this option should be coordinated between regional research or management supervisors and report authors. This section is introduced by a cover page, using the same style as an appendix cover page, with an odd number page to display on the right hand side of the report.

Tables can share a page; in fact parallel tables shown on a single page can give a better presentation than one overly complex table. Printer costs are higher for oversize pages, and the RTS contract for printing does not support that feature. Tables that are less than standard page width are placed to provide the best appearance (narrow tables are most commonly centered on the page, with the title and footnotes justified to the table width). A table formatted to meet the style guidelines provided in this guide follows (Table 1 Example).

FIGURES

The heading "figures" is used in technical reports to include graphs and charts, maps, photographs, and video frame captures. As a guideline, figures are used to present maps, visual aids, and data for which trends or proportions are the defining characteristic (CSE 2006). As with tables, these elements must be sized to fit a page with room for border, title and page number.

GRAPHS AND CHARTS

A clear presentation of the comparative data is paramount; 3-dimensional graphs of two variables are not allowed. As with tables, be consistent with figure elements within a report. Scales for graphical comparison of comparable data should be consistent. Do not use more than four different symbols in a graph, as points become hard to differentiate. Similarly, bar graphs with different shading or patterns used to distinguish different groupings often present shading issues. Degrees of shading may not print correctly in either the printed copy of a report, or in the PDF file. Adobe and Hewlett Packard LaserJet[2] printers both use internal files to duplicate pattern fills, and these do not necessarily match the Word or Excel fill. Printed results of patterned files should be checked to ensure that the segments are unique. In many cases stacked bar graphs do not provide the best comparison of data. Segments of the bar, particularly when there are many types of data, will not provide a clear visual comparison.

[2] These specific printer drivers are included because they are established standards for State of Alaska and do not constitute product endorsements.

Table 1 (Example).–Historical commercial, subsistence, and sport fishing harvests of Chinook, sockeye, coho and chum salmon, Free Bay area, 1968 through 2004.

	Chinook			Sockeye			Coho			Chum		
Year	Commercial	Subsistence	Sport	Commercial	Subsistence	Sport	Commercial	Subsistence	Sport	Commercial	Subsistence	Sport
1968	ND	ND	ND	ND	ND	ND	5,458	ND	ND	ND	ND	ND
1969	3,978	ND	ND	6,256	ND	ND	11,631	ND	ND	5,006	ND	ND
1970	7,163	ND	ND	7,144	ND	ND	6,794	ND	ND	12,346	ND	ND
1971	477	ND	ND	330	ND	ND	1,771	ND	ND	301	ND	ND
1972	264	ND	ND	924	ND	ND	925	ND	ND	1,331	ND	ND
1973	3,543	ND	ND	2,072	ND	ND	5,017	ND	ND	15,781	ND	ND
1974	3,302	ND	ND	9,357	ND	ND	21,340	ND	ND	8,942	ND	ND
1975	2,156	ND	ND	9,098	ND	ND	17,889	ND	ND	5,904	ND	ND
1976	4,417	ND	ND	5,575	ND	ND	9,852	ND	ND	10,354	ND	ND
1977	3,336	574[a]	ND	3,723	ND	ND	13,335	ND	ND	6,531	ND	ND
1978	5,218	ND	ND	5,412	ND	ND	13,764	ND	ND	8,590	ND	ND
1979	3,204	338	ND	19,581	ND	ND	42,098	ND	ND	9,298	ND	ND
1980	2,331	690	ND	28,632	ND	ND	43,256	ND	ND	11,748	ND	ND
1981	7,190	1,409	ND	40,273	ND	ND	19,749	ND	ND	13,642	ND	ND
1982	9,476	1,236	ND	38,877	ND	ND	46,683	ND	ND	13,829	ND	ND
1983	14,117	1,066	31	11,716	ND	14	19,660	ND	168	6,766	ND	10
1984	8,612	629	ND	15,474	ND	ND	71,176	ND	ND	14,340	ND	ND
1985	5,793	426	323	6,698	704	75	16,498	221	386	4,784	348	124
1986	2,723	555	ND	25,112	943	122	19,378	8[b]	ND	10,355	191	ND
1987	3,357	816	ND	27,758	955	266	29,057	43[b]	ND	20,381	578	ND
1988	4,964	310	ND	36,368	1,065	ND	30,832	1,162	ND	33,059	448	ND
1989	2,966	467	68	19,299	861	146	31,849	907	224	13,622	784	0
1990	3,303	539	ND	35,823	1,123	ND	7,804	1,646	ND	13,194	332	ND
1991	912	917	26	39,838	1,282	63	13,312	1,828	297	15,892	149	189
1992	3,528	374	23	39,194	827	8	19,875	1,353	138	18,520	1,006	0
1993	2,117	708	81	59,293	835	53	20,014	1,226	189	10,657	188	156
1994	2,570	784	163	69,490	770	70	47,499	512	170	28,477	470	15
1995	2,922	883	41	37,351	253	34	17,875	305	114	19,832	155	0
1996	1,375	415	157	30,717	352	87	43,836	352	466	11,093	219	0

-continued-

Table 1.–Page 2 of 2.

Year	Chinook			Sockeye			Coho			Chum		
	Commercial	Subsistence	Sport	Commercial	Subsistence	Sport	Commercial	Subsistence	Sport	Commercial	Subsistence	Sport
1997	2,039	449	86	31,451	397	61	2,983	397	855	11,729	133	24
1998	3,675	718	431	27,161	331	502	21,246	331	574	14,155	316	50
1999	1,888	871	223	22,910	582	561	2,474	582	789	11,562	281	47
2000	4,442	703	243	37,252	517	82	15,531	517	795	7,450	364	12
2001	1,519	895	147	25,654	616	108	9,275	616	822	3,412	226	21
2002	979	857	224	6,304	297	149	3,041	297	429	3,799	407	99
2003	1,412	737	10	29,423	783	42	12,658	1,319	681	5,593	176	0
2004	2,565	–	–	20,922	– [c]	– [c]	23,690	– [c]	– [c]	6,014	– [c]	– [c]
10-Year average[d]	2,282	731	173	31,771	490	170	17,642	523	570	11,710	275	27
Historical average	3,751	664[e]	142	23,187	681[e]	136	19,873	834[e]	444	11,494	353[e]	47

Source: Smith et al. 2007.

Note: Commercial harvest from District A-5, combined subsistence harvest by the communities of Free Bay and Elcazador, subsistence harvest estimates prior to 1988 are based on a different formula and are not comparable with estimates from 1988 to present.

Note: In 2004 some data were not collected. ND = no data.

[a] Subsistence harvest estimate in 1977 was for Free Bay only.

[b] Subsistence harvest estimates are for the community of Elcazador only.

[c] Not available at time of publication.

[d] 10-year average from 1994 to 2003.

[e] Historical average of subsistence harvest from 1988 to 2003.

When graphs are submitted as part of a workbook combining many spreadsheets, the sheets must be labeled to indicate which graphs are to be included in the report, and what titles are assigned to them. If any columns, graphs or worksheets need to be excluded from the published report, they must be designated, particularly if they contain confidential data.

MAPS

Identification of the study area and pertinent features in all reports depends on the maps published with the report, and these should be planned for at the onset. It is the author's responsibility to work with publications and cartographic staff to provide good quality maps for a report.

Consistency of mapping elements within reports will improve communication value. Here are some suggestions to improve readability:

- Orient the map with north at the top whenever possible. If latitude index is not included a north arrow should be included.
- Include some type of location reference i.e. an inset showing map location within Alaska, or latitude and longitude indications along border.
- It is preferred that maps include an explanation of scale, in either metric or English units.

Geographic names used on maps must agree with the text of a report, and the maps should graphically illustrate features referenced in the report. Water directional flow should be explained on the map when it is an identifying feature (as in a description of a site "upstream" of a location). Electronic copies of maps are required. If the map file does not convert to the Word document with clear output, it is acceptable to submit the Word version of the report with a space holder for the map page, together with the fully captioned map in another format.

Borders may be used to enclose maps, but are not to include figure captions. All borders should be single, solid lines of 1/2 point in width. Lines and text within maps should be test-printed to ensure readability.

COLOR FIGURES AND PHOTOGRAPHS

Photographs and color graphics can enhance a report presentation, particularly through the Internet posting of the report. The electronic version of a report can easily include color elements. There is a need to consider the extra cost of color printing; the printed copy will contain color only upon special request. As a rule photos and graphics will be printed in black and white, and print settings are designed for text and line art rather than graphical elements. Color figures and photographs will need to be test printed to be sure they work as grayscale images as well. When designing color figures, print out the figure as a grayscale image to be sure the colors selected do not all print out the same shade of gray. It may be more effective to design the figure using textures instead of colors. Color photographs should be test printed as grayscale images as well. While the colors in the photo may appear vibrant, the grayscale image may not be as dynamic. The photo may need to be adjusted with photo imaging software to increase contrast so that it is effective as a grayscale image. Check with your publications staff if you have questions. Also keep in mind that color image files sizes are larger than grayscale image files.

Photographs are treated as figures in our reports, and as such should have clear borders and titles. All photographic elements must be individually titled, although grouped elements can be subtitled within a central caption heading.

A frame capture is treated as a figure in our reports, and should include the time code for sequential shots, or a single time for non-sequential shots. All frame captures must be individually titled, although grouped elements can be subtitled within a central caption heading. In this case the figure caption can reference the individual images included in the figure, if necessary.

Footnotes in Figures

Footnote format will follow the guidelines established for tables. Footnotes that append to a figure follow the figure caption, and are in a smaller size font, and are separated by a hard return.

EQUATIONS

All equations used, except those commonly encountered and not ambiguous (such as chi-square, Student's *t*, standard deviation and variance for simple random sampling) should be included or cited in the methods. Equation subscripts should be unique identifiers. Do not use *i* to designate "fish" in one equation and to designate "set" in another equation. The statistical significance of measurements should be explained.

All variable names must always be in italics. The names of all standard statistical tests are variable names (for example *t,* X^2 and so on). Significance probabilities are variable names (for example $p > 0.01$) as are regression coefficients and acronyms when used as variable names. It is not necessary to define standard equation symbols (for example, $\sum$ used to denote summation).

Place attention on your equation narrative. Break complex concepts into a series of less complex concepts. Introduce one new concept at a time, and fully explain before going on to the next. Consistently call mathematical ideas by one name and use that name consistently for the same purpose.

Simple equations may be included in the text if the equation will fit legibly within the line spacing for the normal paragraph style. These equations should not be numbered. Numbering of more complex equation elements is required for reference purposes. Complex equations displayed in documents prepared with the 2-column template may be formatted to print across both columns. If the equation exceeds a single column width, do not wrap text around the equations, and place the equation number in parentheses aligned with the right margin of the page. An example of a formatted, numbered equation follows:

$$Var\left(\hat{D}_i\right) = \frac{\hat{D}_i\left(1 - \hat{D}_i\right)}{n_{ti} - 1} \qquad (1)$$

The standard program to typeset equations is Microsoft Equation[3], included in the State of Alaska standard Word Office products. If other programs are used, care must be taken that the symbols translate correctly when the document is submitted for review, editing or publication staff without the specialized product.

Equations Editor default styles must be modified to meet those defined below for division reports. Invoke the Equations Editor and then reset the styles and sizes (*styles>define*, and

[3] Product name is included for complete description of process, and does not constitute a product endorsement.

size>define) to the specifications below. Use modified settings for styles, with Matrix Vectors **bold**, and all other fonts normal, with the exception of variables which are *italic*. Equation styles are as follows:

Style name	Font
Text	Times New Roman
Function	Times New Roman
Variable	Times New Roman *italic*
Matrix Vector	Times New Roman **bold**
Number	Times New Roman
LC Greek	Symbol
UC Greek	Symbol
Symbol	Symbol

When you use the *Size>Define* command within the Equation Editor to change a type size, all equations in the current Equation Editor window will be redrawn using the new type sizes. Equations saved in documents will not be affected unless you edit them again with Equation Editor. Therefore, equation formatting may be disrupted if software used to edit equations in a report is set up with different equation point sizes on different computers. Equation point size recommendations are listed below for one and two-column page layouts:

Size	One-column	Two-column
Full	12	11
Subscript/Superscript	10	9
Sub-subscript/Sub-superscript	8	8
Symbol	14	12
Sub-symbol	12	11

The s*ize other* command within the Equation Editor may be used to manually override the default point size for any selected portion of an equation. Manually formatting components of an equation is much slower than using the sizes established with s*ize>define*, but is useful for editing in line equations.

ARCHIVES

RTS will maintain electronic copies of all published division reports. The archives will be in both Microsoft Word and PDF format. Operational planning for a project should include planning project protocols for archiving of the data associated with the study.

ADF&G is a founding member of ARLIS, and the library is responsible for long-term historical access to ADF&G research data. ARLIS has a dedicated server for all PDF files submitted through these series. Although the usability of the Word files will change with software updates, it is our understanding that the electronic PDF files, together with the paper copies on file in the Alaska State Library, will provide long-term historical access to ADF&G research data and project information.

An electronic copy of the final edited version of all originally recorded data used in preparation of the report will be submitted with the final drafts of Fishery Manuscripts and Fishery Data Series reports. Provide data archives and reporting documents in a clearly labeled format so that they support each other. Do not combine data files for more than one report on the data media submitted with a final report.

A report should contain a list of data files used in preparation of the report and the location of the stored files. For any files submitted with the report, the location will be listed as RTS Publication archives. These files will be added to the central archives in RTS and associated with the published report. Publications staff will check the data table supplied with the report, and verify that any files that are listed in RTS storage are supplied with the report final.

FINAL PUBLICATION OF ELECTRONIC REPORTS

Staff and general public can access the PDF optimized reports at the ADF&G Internet http://www.sf.adfg.state.ak.us/statewide/divreports/html/intersearch.cfm (Accessed 03/2008). The published files are password protected to prohibit changes, content extraction, or additions to published files.

The joint divisional publication web page provides search capability of the technical report series final publications. A simple search can query the reports by author, title, key word, or file name, while the advanced search function narrows a search to specific fields and report types. The "Find" tool available in Adobe Acrobat Reader will search within a specific report for a word or phrase.

While the PDF files of the reports open to display page panels, the *Bookmark* pane can be opened to enable a different set of interactive tools. Reports contain bookmarks for the first 4 levels of headings. Table of contents and lists are linked to the content within the report. Additionally, the PDF publication will match the printed Word copy in pagination, making jumps to specific locations straightforward.

When a revision is necessary to a final publication, minor formatting changes can be made to the electronic published copy without annotation. Any change that affects substance must be submitted through regional research or management supervisors as a revision, and the electronic copy will be annotated on the cover page that a change has been made. The library copies of revised reports will be updated to reflect the change. Major revisions require an Addendum, which will be published as a separate document.

COPYRIGHT AND TRADEMARK ISSUES

Many of the product names of tools used in fishery research have registered or trademarked names with the United States Patent and Trademark Office. The designations "TM" (trademark) or "SM" (service mark) mean that the product name is claimed as a legal possession. The symbol ® designates a product that has an approved registry of its name with the United States Patent and Trademark Office. When a product or service described in your report is trademarked or registered, we recommend that your description bears that identifying mark, as it describes legal ownership for the product. The Patent Office maintains a searchable database on the web which can be used to identify registered trademarks, currently at http://assignments.uspto.gov/assignments/q?db=tm.

DISCLAIMER

In the course of reporting a study, there may be references to specific products used in conducting the research. When a description of methods includes a company name of a product, a footnote is required to emphasize that the reference does not constitute an endorsement of the product. A sample wording of the footnote would read, "Product names used in this report are included for scientific completeness, but do not constitute a product endorsement."

ROLES OF AUTHORS AND PUBLICATION STAFF

Divisions and regions establish a workflow that supports their reporting needs and staff. The regional publications staff will work with regional research and management supervisors to establish the relationships between activities in a project, and tracking for reports (Figure 2). This guide is not an appropriate place to establish regional workflow, but it is certainly a place to make it clear that reporting success depends on the ability of regions to establish working relationships that support management, authors, editors and publication staff.

AUTHORSHIP AND DISTRIBUTION OF REPORTS

Names of co-authors are published in the order provided on the submitted manuscript; however, the relative order of names listed on papers is not a clear indication of order of contribution of authors. If authors wish to designate relative contribution, they should prepare an appropriate footnote. Use the same form of your name on all reports, using a consistent form for names and initials. A consistent name throughout a scientific writing career will reduce confusion and yield a larger body of work should an author be the subject of a publication database search.

Reports will be distributed as follows:

- Reports will be printed for Alaska Resources Library and Information Services (ARLIS) and for the State of Alaska Library. Printed and electronic copies of reports in designated format will be produced to meet requirements of other funding agencies.
- Reports will be made available in electronic format to universities, libraries, and government agencies by request and by mailing list distribution.
- Electronic reports will be available in the searchable database of reports on the State of Alaska Internet site.

REPORT SERIES

The Divisions of Sport Fish and Commercial Fisheries have established report series to encompass all scientific reports produced for publication (Mills et al. 1995, Wilbur et al. 1992). Each series, although related in style and format, represents a distinct type of information. Grouping publications into series provides the scientific community with the basic information it needs in accessing the report, including level of review, purpose, and the intended audience (CSE 2006).

Although publication of research in outside journals is highly encouraged, many of our reports necessarily contain too much data to accommodate journal publication policies. Timely publication is an ADF&G priority, and may not be served by journal publication. Therefore, ADF&G joint divisional fisheries have established report series for technical reports published internally, and guidance for external publications in journals. The style guidelines for the series are designed, where compatible with joint divisional reporting policies, to meet general reporting standards established by the scientific community.

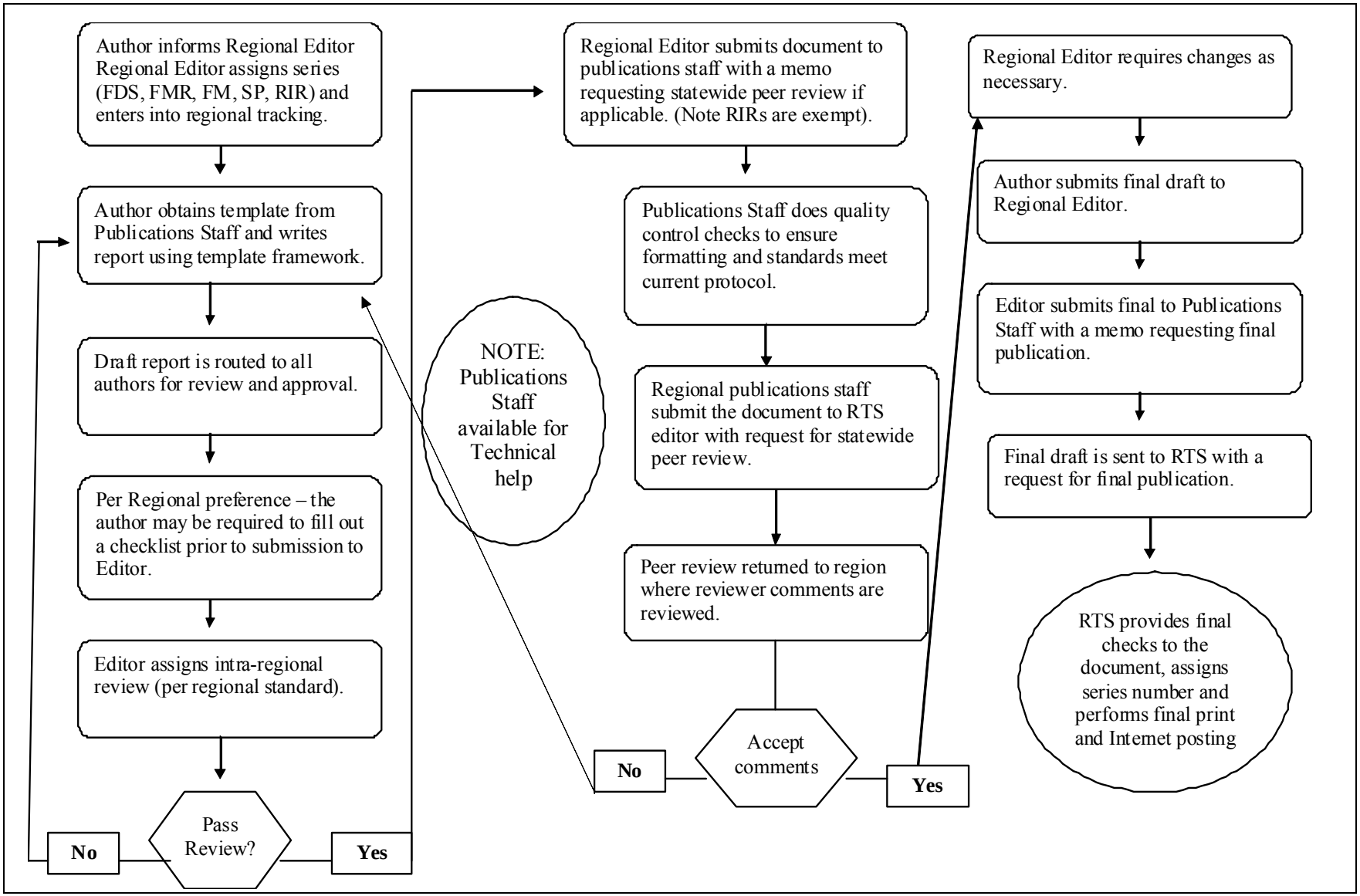

Figure 2.–Example of flow chart for project report completion.

Source: submitted by Jim Craig, Publications Specialist for ADF&G Division of Commercial Fisheries, Douglas.

FISHERY DATA SERIES

Fishery Data Series reports are technically oriented and present results for a single project or a group of closely related projects. The reports should be timely, and typically present the results of a single year's work, but can also cover a span of time for a continuous project.

Fishery Data Series reports require biometric, peer and editorial review and are prepared under the guidelines outlined in this manual. Fishery Data Series reports are intended for fishery and other technically oriented professionals.

FISHERY MANUSCRIPTS

Fishery Manuscripts present a broader outlook on one or more projects. For example, a study presenting results of several years of work undertaken on a project to address common objectives would fall within this series. Fishery Manuscripts can provide an overview of work undertaken through multiple projects to address a specific research or management goal. These reports can describe new or highly technical methods.

Fishery Manuscripts require biometric, peer and editorial review and are prepared under the guidelines contained in this manual. Fishery Manuscripts are intended for fishery and other technically oriented professionals.

FISHERY MANAGEMENT REPORTS

Fishery Management Reports provide an overview of management activities or management plans in a stated geographic area during a stated time period. Fishery Management Reports may compile research results fully reported in Fishery Data Series publications, with appropriate citation. This series compiles harvest estimates, fish abundance estimates, and catch statistics as related to management activities. It is important to carefully document original sources for data presented within this series, as historical data often provide the context for management.

The audience for Fishery Management Reports will include laypersons as well as professionals, so authors should avoid technical terms. As part of the management process, these reports often include information presented to the Alaska Board of Fisheries, formatted to fit the series standards. When specific purpose reports are included in this series, that information should be contained in the title of the report (Area Management Reports, Reports to the Alaska Board of Fisheries, for example). Regional management staff determines the level of peer review for each Fishery Management Report. Independent peer review arranged by the editor is not required.

SPECIAL PUBLICATIONS

Special Publications include reports that do not fit in other categories in the division series, such as fishery techniques manuals, special subject reports to the Alaska Board of Fisheries or other decision-making bodies, symposia and workshop proceedings, policy reports, and in-house course materials.

The audience for and distribution of Special Publications will vary widely. Reports may be of interest to fisheries professionals, publication specialists, and the general public or Alaska Board of Fisheries members.

Special Publications are to be prepared following the instructions and guidelines contained in this manual and generally require biometric, peer and editorial review. However reports

produced for management professionals for specific information purposes may bypass peer review, as regional oversight is heightened in these circumstances, and the decision-making process dictates deadlines for publication.

REGIONAL INFORMATION REPORTS

The Regional Information Report Series was established in 1987 and was redefined in 2006 to meet the Division of Commercial Fisheries regional need for publishing and archiving information such as project operational plans, area management plans, budgetary information, staff comments and opinions to Alaska Board of Fisheries proposals, interim or preliminary data and grant agency reports, special meeting or minor workshop results and other regional information not generally reported elsewhere. Reports in this series may contain raw data and preliminary results. Reports in this series receive varying degrees of regional, biometric, and editorial review; information in this series may be subsequently finalized and published in a different department reporting series or in the formal literature. Please contact the author or the Division of Commercial Fisheries if in doubt of the level of review or preliminary nature of the data reported. An ongoing effort will make this series, as well as many historical series, available through the Commercial Fisheries and the joint publication web pages.

PROFESSIONAL PAPERS

Professional Papers include manuscripts that address issues of concern to the department and are prepared by division personnel for publication in a professional journal. The primary audience will be fishery professionals, but some papers may be of interest to other disciplines. Distribution will vary with the publication.

All professional papers must obtain director's approval (or designee) before submission for publication. All papers authored by ADF&G staff by their nature represent the department.

The author should submit the papers to the regional research or management supervisors, who will submit the manuscript for the director's approval and arrange for the peer review (when merited) through publications staff. Professional papers follow the guidelines of the intended publisher.

COMMERCIAL FISHERIES: HISTORICAL REPORT DESCRIPTIONS

Informational Leaflet

This series was published from 1961 to 1986 and was renamed the Fishery Research Bulletin (FRB) in 1987.

Fishery Research Bulletin

The Fishery Research Bulletin (FRB) is a continuation of the Informational Leaflet (IL) series. It was renamed the Fishery Research Bulletin in 1987, and was published until 1992. This monograph series published completed studies or data sets that had been compiled, analyzed, and interpreted consistent with then-current scientific standards and methodologies. Most reports in this series were technical and intended for use primarily by fishery professionals and industry representatives. Most data presented were final. Publications in this series usually received several editorial reviews and two blind peer reviews refereed by the division's editor.

Statistical Leaflet

The Statistical Leaflet (SL) series was published by the Department's Statistical Section from 1961 through 1974 and by the Computer Services Section from 1975 through 1985. It published annual catch and production information from the commercial fishing industry as well as commercial operator information such as cannery names and addresses, plant locations, and specific production products. Catch information was provided by fish tickets, and production information summarized production data listed in the Commercial Operator's Annual Reports. All information was based on the calendar year.

Fisheries Rehabilitation, Enhancement and Development (FRED) Division Reports

The ADF&G's Division of Fisheries, Rehabilitation, Enhancement and Development (FRED) was created in 1971 by legislative action in response to declines in salmon catch and advances in salmon aquaculture technology. This division was under statutory obligations to 1) develop and maintain comprehensive, coordinated state plans for the enhancement and development of the state's fisheries; 2) encourage private investment in technological development and economic utilization of fish resources; 3) create rehabilitation, enhancement and development programs that would ensure perpetual and increasing production and use of the food resources of Alaska waters and continental shelf areas; 4) coordinate the activities of the department and the regional aquaculture associations; 5) process permits and applications for private nonprofit hatcheries and 6) advise and assist nonprofit hatchery corporations in the planning, construction or operation of salmon hatcheries. The series was published until 1993, and provides an archive of scientific and technical data relating to its statutory obligations. In 1993 the FRED Division merged with the Division of Commercial Fisheries and reports previously published under the FRED report series were moved to the Division of Commercial Fisheries' Regional Information Report (RIR) Series.

Technical Data Report

The Technical Data Report (TDR) series was published from 1972 to 1988, when it was replaced by the Technical Fishery Report (TFR) report series. The TDR series published data from ADF&G studies of interest to scientists at other agencies. Program descriptions and data collection methods were included only to the extent required for interpretation of the data. Analysis was generally limited to that necessary for clarification of data collection methods and interpretation of the data. This series primarily received internal regional review.

Technical Fishery Report

Technical Fishery Report (TFR) series was published from 1987 to 1995, replacing the Technical Data Report (TDR) series. Unlike the TDR series, this series sometimes included data analysis. Reports published in this series were generally interim or annual reports rather than final reports summarizing a completed study or project. They were technically oriented and intended for use primarily by fishery professionals and industry representatives. The TFR series received editorial review and an anonymous peer review.

COMMERCIAL FISHERIES: CURRENT PUBLICATION DESCRIPTIONS

Division of Commercial Fisheries Special Publications

The Division of Commercial Fisheries Special Publication (CFSP) series was established in 1989 for the publication of departmental symposium or workshop proceedings, strategic fishery

management plans, manuals, reprints of theses or dissertations pertinent to Alaskan fishery management, and other atypical publications. This series was intended for fishery professionals and industry representatives. Distribution was limited to selected libraries, fishery-related agencies, and interested departmental staff. As these reports received limited regional peer review, it was the former policy of the division that they not be cited without prior approval of the author or the Division of Commercial Fisheries. In 2004, the Division of Commercial Fisheries merged its reporting processes with the Division of Sport Fish and replaced its own Special Publication (CFSP) series with the Special Publication series published by the Division of Sport Fish.

Regional Information Report Series Description and Reporting Guidelines

Regional Information Report Series History And Current Series Description

The Regional Information Report series was first established by the Division of Commercial Fisheries in 1987 to provide a means to access unpublished divisional reports and formally archive other regional information important to the division. These reports frequently served diverse ad hoc informational purposes or archived basic uninterrupted data. To accommodate timely reporting of recently collected information, many reports in this series contained preliminary data. Because reports received varying degrees of internal, peer and editorial review, division policy required that these reports not be cited without prior approval of the author or the Division of Commercial Fisheries. Over time this series became broadly used by department staff to report on a variety of scientific, technical and management oriented research or data and has become routinely cited both within the division and by outside interests.

In 2004, the division instituted a new reporting policy that limited the use of the RIR series and redirected divisional reports into four technical report series managed by the Division of Sport Fish: Fishery Data Series, Fishery Manuscripts, Fishery Management Reports, and Special Publications. The RIR series historically captured annual reporting of stock assessment results, various Board of Fisheries, North Pacific Fishery Management Council (NPFMC) and legislative reports, documentation of management strategies, annual management reports and forecast documents. Many of these reports can now be found through one of the Division of Sport Fish managed publication series. In 2006, the Division of Commercial Fisheries formally recognized the need to provide access and broad citation approval for both current and historic reports within the RIR series. Historic reports identified by the division are being made available electronically to division staff and the public via the Internet.

In 2006, the division further redefined the RIR series addressing the Division of Commercial Fisheries need for publishing preliminary information and archiving information important at the regional level. Currently the RIR series represents the appropriate publication forum for project operational plans, area management plans, budgetary information (regional red and blue books), staff comments and opinions to Board of Fisheries proposals, interim or preliminary data and grant agency reports, special meeting or minor workshop results and other regional information not generally reported elsewhere such as procedure and safety manuals and executive summaries of other published reports. Reports in this series may contain raw data and preliminary results. Reports in this series receive varying degrees of regional, biometric and editorial review. Information in this series may be subsequently finalized and published in a different department reporting series or in the formal literature.

Reporting, Reviewing, Publishing and Archiving Guidelines for the RIR Series

Regional research supervisors, their designees and equivalents are responsible for determining if a report should be published under the RIR series or be published as one of the joint-divisional series. Reports written for the RIR series should be characteristic of the RIR series description and be prepared under guidelines consistent with the joint division's current reporting policies. The RIR series report template should be followed and reports in this series should include an abstract and keywords. The RIR series template is similar to the joint-division reports templates and provides for easy transition of reports from the RIR series to one of the joint-divisional series. It is understood that under special circumstances these format requirements may be waived. This should be a rare occurrence, examples being a U.S./Canada Yukon River Joint Technical Committee Report or staff comments to Board of Fisheries proposals, where the format has been agreed upon with another agency or group. An abstract and keywords are still required.

Regional research supervisors, their designees and equivalents are responsible for determining the level of regional review required for each report within the RIR series. Biometric review is required for all reports in which estimates are generated, or a hypothesis tested. Report publication and archiving responsibility are under direct regional control. Reporting protocols and duties may vary between regions. Specific regional reporting policies and procedures should be documented by each region and be provided annually or on an as needed basis to regional reporting staff and headquarters publication staff.

The RIR series continues to be divided into five subseries: one for each of the four regions and one for headquarters. The subseries are determined by the region of the senior author. The RIR report number is composed of the following elements: the first digit identifies the region in which the senior author of the report is employed (1, 2, 3, 4, or 5); the following letter identifies the regional office (i.e., **J** for Juneau, **A** for Anchorage, and **K** for Kodiak); the next two digits preceding the hyphen are for the current year (e.g., 07); the last two digits identify the sequence number (e.g., 13 would be the 13th report from a given region in a given year). The city listed on the report's address should be the regional office city (Anchorage, Juneau, and Kodiak). The publication date (year) on the report should be consistent with the year used in the report number.

To publish an RIR on the RTS database, the following steps need to be taken at the regional level. Upon completion of the RIR, publications staff will assign a number, generate a PDF file with metadata filled in, and establish pagination, links, and bookmarks. Metadata will be compiled in a RIR endnote file, which will be sent to RTS along with the Request to Publish memo. The PDF file of the RIR publication will be uploaded to the appropriate folder on docushare.

An electronic file of the newly published RIR will be sent to ARLIS, together with two bound paper copies, and six copies will be sent to the state library.

Regional Information Report description

A description of the RIR series will be placed on the page preceding the Table of Contents. The following text should be used:

The Regional Information Report Series was established in 1987 and was redefined in 2006 to meet the Division of Commercial Fisheries regional need for publishing and archiving information such as project operational plans, area management plans, budgetary information, staff comments and opinions to Board of Fisheries proposals, interim or preliminary data and grant agency reports, special meeting or minor workshop results and other regional information

not generally reported elsewhere. Reports in this series may contain raw data and preliminary results. Reports in this series receive varying degrees of regional, biometric, and editorial review; information in this series may be subsequently finalized and published in a different department reporting series or in the formal literature. Please contact the author or the Division of Commercial Fisheries when in doubt of the level of review or preliminary nature of the data reported is in question.

OTHER DIVISION OF SPORT FISH DOCUMENTS

Fishery Management Plans

Division Fishery Management Plans are periodically written to provide documentation of management strategies dealing with specific fisheries that, because of their importance or a particular species concern, require a specific and focused management plan. The plans enable public, ADF&G and Alaska Board of Fisheries review and input, and provide guidelines and goals leading toward optimization of sport fisheries. Fishery Management Plans are reviewed and updated either on a regular schedule or as the need arises, depending on characteristics of the fishery.

OTHER ADF&G SPORT AND COMMERCIAL FISHERY DOCUMENTATION

These report series are part of a network of documentation that follows a project from initial funding through to completion. Among these are Federal Aid funding documents, operational plans, and synopses. The writing principles, grammar, and word usage will follow the standards and guidance provided in this manual, unless exempted for specific reporting elements.

CONFIDENTIALITY OF FISHERIES INFORMATION

What follows is a summary of the statutes governing confidentiality of information compiled in the course of ADF&G business. The statutes summarized in this guide are provided as an informative service to authors, and this is not intended to be a complete summary of all confidentiality statutes. These regulations are subject to legislative change. Some provisions listed below are summarized from actual language in AS 16.05.815 and therefore do not include the complete provisions spelled out in law. Division staff should confer with ADF&G headquarters if unsure whether or not to release a document that may contain confidential information.

BACKGROUND

Alaska Statute 16.05.815 prohibits the Department of Fish and Game from releasing certain information that it receives from fishermen, fish buyers, and processors. The purpose of such confidentiality is two-fold; it ensures that detailed information on individual business activities will be held confidential, and it provides an incentive for the public to furnish the department with good data. It is essential to successful management that the accuracy and integrity of our database be maintained. It is also imperative that a trust relationship between state government and private enterprise be maintained by adhering as closely as practicable to the intent of the law.

To ensure that the information we receive from the industry is as accurate as possible, we must maintain their confidence in the security of the information they are providing to us. We must also balance the need of the public and other agencies to know upon what information our decisions are based against the industries' need to keep some of their activities confidential.

Toward that end, division staff shall adhere to the following guidelines when deciding whether or not to release information to the public.

Certain ADF&G records and reports required by state regulations are confidential under Alaska statutes. These records and reports include catch reports (fish tickets) and fishermen's log books; annual reports filed with the department by buyers, processors, and exporters (the Commercial Operators Annual Report); data collected by onboard observers and port samplers; crab survey results; and specific locations of fish and wildlife species, including nesting and denning sites.

RESTRICTIONS ON RELEASE OF INFORMATION

Information will not be released that directly identifies a fisherman, buyer, or processor, or a specific location where fish have been taken. Such information includes, but is not limited to, names of individuals, businesses, and vessels, ADF&G numbers, processor codes, latitude and longitude, GPS bearings, and LORAN readings. Other personal information, such as social security numbers and birthdates, are also held confidential under other laws and regulations.

Information will not be released if it is reasonable to assume that a person with average knowledge of the fishery could: 1) identify an individual fisherman, determine the fisherman's harvest, or determine the specific location where the fisherman caught fish, or 2) identify an individual fish buyer or processor and determine the fish purchasing, processing, and sales activities of the buyer or processor.

POSSIBLE RELEASE OF COMPARABLE INFORMATION—THE RULE OF "3"

As a general guideline, aggregation of catch information such that it includes the landings of three or more fishermen will sufficiently mask the data so that release does not violate the confidentiality statute. This guideline should provide the flexibility needed to achieve the objectives of protecting individual business interests, providing the department with accurate information, and ensuring that the public has access to the type and amount of information they need to evaluate the department's programs and their own operations. Knowledge of the industry and its participants at the local level should allow staff to make reasonable and justifiable decisions on what can and cannot be released. The following factors should be considered during the decision-making process:

- The age of the information. Information that should not be released immediately after the season or at some later time.
- How knowledgeable members of the fleet are of the activities of other members of the fleet.
- The degree to which locations of abundance change and the speed of those changes. If the species are relatively mobile (e.g., pollock) or they can always be found in the same location every year (e.g., salmon) and the fleet is aware of those facts, then the information could be released.
- The age of the fishery and its databases. Information on fisheries with relatively consistent participation, location, and catch histories could be released. Information on new fisheries or data that is exploratory in nature should be treated more carefully.
- Mobility of the gear used in the fishery. The more mobile the gear is, the less likely an individual fisherman or an exact fishing location can be determined.

Confidential information can be released upon consent of the persons or companies involved. Consent should be in writing.

EXCEPTIONS

Crab Surveys

Information about crab populations that result from a survey that is not conducted by or funded by the state, (e.g., National Marine Fisheries Service Bering Sea King and Tanner crab survey information) is not confidential under state law.

Databases that cannot be released because of the application of guidelines contained in this policy can be modified in a manner that will allow release. The following are ways in which that can be done.

- List group landings to show those from at least three vessels. This is a standard that has been used successfully in the past.
- Use geographical reporting areas or combinations of areas that are large enough to preclude someone from identifying accurately the exact location of any particular person's harvest. Use reporting areas that include at least three different actual, or potential, harvest locations.
- Manipulate other strata, such as time, number of landings, amount of landing, etc., to mask confidential data so it can be released.

Special Cases

If the public's interest in disclosing the information clearly outweighs the private interest in withholding it, a public interest exception can be granted. This requires written finding and authorization from the commissioner, and could require written notification to subjects whose information is being disclosed. Recent examples include Glacier Bay Compensation Program (release of COAR to processors), and the Chignik co-op fishery (release of information for evaluation of fishery).

TYPES OF CONFIDENTIAL INFORMATION

Information covered by AS 16.05.815 and these guidelines includes all information obtained by regulatory requirements, including information that may be required under the authority of a permit-type fishery that is established by emergency order, whether it is submitted orally or in writing.

Also covered by these guidelines is information of a voluntary nature, such as that from log books and dockside interviews, where we have stated we would treat that information as confidential.

- Fish tickets (records and reports). It does not belong to the buyer or processor that purchased the fish or to the vessel owner if the vessel owner was not the fisherman. For someone other than the fisherman to receive an individual's fish ticket records, they would have to produce a notarized confidentiality waiver signed by the fisherman. Similar waivers are required for release of processor data. Without a confidentiality waiver, ADF&G would only release the information by court order. There is no statute of limitation on fish ticket or buyer/processor data. That is, it remains confidential forever.

- Processor annual reports (COAR)
- Observer data
- Log books
- Crab abundance survey data
- Community Development Quota (CDQ) landings from fish tickets
- Specific area or location
- Personal information (Social Security number or information that can be used to identify a person and from which judgments can be made about a person's character, habits, avocations, finances, occupation, general reputation, credit, health, or other personal characteristics AS 44.99.300(2). Personal information does not include address, phone number (if not an unlisted number), cell phone number, radio call sign, e-mail address, vessel name or number, or Commercial Fisheries Entry Commission (CFEC) permit number.
- Peer review of scientific papers (SOP III-402)
- Attorney-client communications

TYPES OF INFORMATION NOT CONFIDENTIAL

- Vessel registrations
- Lists of permit holders or vessels in a fishery (yes/no)
- Surveys – economic studies, processor capacity survey, etc.

SUMMARY

Division staff should confer with headquarters if unsure whether or not to release a document that may contain confidential information.

REFERENCE FORMATTING

BASIC GUIDELINES FOR REFERENCES

The section heading references cited is used in joint fisheries technical publications, because all publications listed are cited in the text. All sources listed in the references cited section must be mentioned at least once in the text, table section, or appendices of the report. A bibliography, in contrast, provides a list of references that pertain to the subject report, but may or may not pertain to specific report text.

Most of the examples provided in this guide are based on standards set forth by the Chicago Manual of Style (CMS 2003) and journals of American Fisheries Society (AFS 2006). The construction of a citation can vary from guide to guide, but the basic and required elements for a complete citation remain the same across guides. These examples are a guideline to providing accurate citation information in an easily identifiable format.

Reporting Original Data

When referencing historical data, it is the author's responsibility to provide the information so that the reader can find the original source of the data. The key is to ensure that a person unfamiliar with your project could take your report and reproduce your tables, figures and other estimates using the sources you cite. For data not collected as part of the current report project, the report in which the data were originally collected should be cited. If the source is not a published document, provide an in-text reference to the source, with explanation that identifies the location and authority of that source.

If the report is the first place where data or estimates are published, the author must include a methods section to clarify how the data were collected and how estimates were made. For example, if the Division of Commercial Fisheries collects weir counts, and the counts are reported in a report covering a different topic, the author must explain the how, when, and where of the weir operations in the methods section, or cite a published report on the companion project. Original estimates should not be modified; instead the data should be provided with explanation. For example, if a certain aerial survey is believed to be inaccurate because of bad water conditions; do not provide an alternate estimate based on a different method. If there is reason to doubt an estimate, or if the estimate is not comparable to other historical data, then either it should not be presented, or presented with a disclaimer footnote. Source information should never be summed without explanation. Do not mix types of estimates that are not comparable. For example, don't put estimates of harvest or effort that were obtained from the Statewide Harvest Survey data in the same column with estimates from a creel survey; present the estimates in two separate columns. Do not mix foot counts, aerial survey results, and weir counts in a single table without clarification.

ENDNOTE BIBLIOGRAPHIC LIBRARY

In order to ease the many formatting decisions associated with references, the publications staff maintains a bibliographic database (EndNote) updated as reports are published, and on demand. This program supports "cite while you write" capability. Rather than typing a bibliography as a separate step, authors can rely on the database to automatically build the list of references. A style sheet has been prepared in conjunction with the EndNote database that will correctly format citations to the RTS style, both in text and in list sections. For EndNote users, the bibliographic template and the updated centralized library are currently available on the RTS Reporting Docushare site at http://docushare.sf.adfg.state.ak.us/docushare/dsweb/View/Collection-1345.

STANDARDS FOR CITING SOURCES WITHIN THE TEXT

- Basic text references take the name/year convention. Use this form after a statement is made referencing the citation: Grayling are believed to be present (Jones 1989).
- If the citation reference occurs within the sentence, include only the year of publication within the parenthesis: Jones (1989) claims that grayling are present.
- When the author's name is in the possessive case, the citation immediately follows the word modified: Bernard's methods (1989) are the test used to determine if grayling are present.
- When there are two coauthors of the report cited, list both names in the text reference: Grayling are believed to be present (Jones and Smith 1989).
- When there are three or more coauthors of the report cited, list the primary author followed by et al. : Some investigathors thought that no grayling were present (Jones et al. 1990).

- In text citations multiple reports by the same author are separated by a comma, citations to reports by a multiple authors are separated by a semicolon: (Jones 1989, 1992; Smith 1993).
- If there are multiple authors with the same last name, include author initials in the reference: Some researchers investigated the grayling disappearance (D. Jones 1989; E. A. Jones 1989).
- List multiple works by the same author(s) chronologically by year of publication, with the oldest date first, and separate dates with a comma: Studies indicate that grayling are present (Jones 1996, 1998). When there are more than 2 dates included, list them in a series: (Jones 1996–1998).
- When there are different reports cited with the same author in a year, clarify them with an alphabetic designation: (Jones 1989 a, b).
- When there are multiple references to reports with different authors, group all citations by the same author chronologically. These grouped citations can be ordered either chronologically: (Jones and Smith 1989; Alt 1990–1992; Jones 1993) or alphabetically: (Alt 1990–1992; Jones 1993; Jones and Smith 1989) at author's choice, but must be consistently ordered within a report.
- When there is no clearly identifiable author, but only an editor, cite the editor's name(s) in place of the author followed by "editor" :(D. V. Jones, editor. 1981).
- If the reference is to a very specific section of a lengthy book or other document, note the pertinent page or pages. Example: (Jessen 1978, equation 5.8, page 128). Otherwise do not include page numbers.
- Use *In prep* (italicized) to cite reports that have been accepted for publication but not finalized. The recommendation is to only allow a citation of a report as *In prep* if the report has actually been written, and is somewhere in the review process. Until that point in the production process, do not include the working paper in the References Cited listing, but list it using the format of a personal communication.
- Use *In press* for reports that are approved for publication and are in the printing process. *In press* should not be used for publications forthcoming through the ADF&G publication series, because our process is unique and not appropriately described by that phrase. *In press* is typically used for an article or book already typeset, submitted and accepted for formal publication, but that has not yet reached the publication date.

STANDARDS FOR LIST OF REFERENCES CITED

Standard References Cited Format for ADF&G Scientific and Technical Series Publications

- List author last name, followed by a comma, and author initials as they appear in published report. Initials are separated by a single space.
- List coauthors with initials first, followed by last name. Final coauthor is separated by "and," followed by two spaces to lead into publication year.
- List year of publication. Follow this with 2 spaces.
- List title of the report. For titles only the first word, proper nouns, and proper adjectives should be capitalized. Follow the title with 2 spaces.
- List publisher followed by a comma, and publication series, followed by a comma.
- List place of publication, followed by a period.

Format:

Author. Year. Title. Alaska Department of Fish and Game, Series Title No. XX-YY, City.

Example:

Mills, M. J. 1989. Alaska statewide sport fisheries harvest report. Alaska Department of Fish and Game, Fishery Data Series No. 122, Juneau.

A Regional Information Report will be cited in the following style:

Stewart, R. 2003. Techniques for installing a resistance board weir. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A03-26, Anchorage.

Sample Standard References Cited Formats

Periodical

McKinnell, S. A., A. J. Thompson, E. A. Black, B. L. Wing, C. M. Gutherie Jr., J. F. Koerner, and J. H. Helle. 1997. Atlantic salmon in the North Pacific. Aquaculture Research 28 (9)145-157.

Weekly or monthly magazines, even if numbered by volume and issue, are usually cited by date only.

Periodical with a URL

Pritchard, V. L., K. Jones III, and D. E. Cowley. 2007. Genetic diversity within fragmented cutthroat populations. Transactions of the American Fisheries Society 136:606-623. http://afs.allenpress.com/perlserv/?request=get-abstract&doi=10.1577%2FT06-038.1 Accessed June 2007.

But note: When the electronic version is static and based on a print version of an article, the citation doesn't necessarily require the date of access.

Reference with agency or governmental department or division as author

USDA (United States Department of Agriculture). 1992. Kenai River landowner's guide. Prepared by the U. S. Department of Agriculture, Soil Conservation Service (SCS) for the Kenai Soil and Water Conservation District, Kenai, Alaska.

Note: Include state or appropriate country at the end of an agency or university citation address only when needed to locate the city.

Pages cited within a work, an editor, and translator

Rumyantsev, A. I., and M. A. Darda. 1970. Summer herring in the eastern Bering Sea. [*in*] Soviet fisheries investigations in the northeastern Pacific, Part V: 409-41. Edited by P. A. Moiseev. Translated by Israel Program for Scientific Translation. Jerusalem, 1972.

Edited works

Humphreys, R. D., S. M. McKinnel, D. Welch, M. Stocker, B. Turris, F. Dickson, and D. Ware, editors. 1994. Pacific Stock Assessment Review Committee (PSARC) Annual Report for 1993. Canadian Manuscript, Report of Fisheries and Aquatic Sciences, Number 2227.

Work within a publication with editors

Eggers, D. M., and D. E. Rogers. 1987. The cycle of runs of sockeye salmon *Oncorhynchus nerka* to the Kvichak River, Bristol Bay, Alaska: cyclic dominance or depensatory fishing? Pages 343-366 [*In*] H. D. Smith, L. Margolis, and C. C. Wood, editors. Sockeye salmon *Oncorhynchus nerka* population biology and future management. Canadian Special Publications of Fisheries and Aquatic Science 96, Ottawa, Canada.

Published Proceedings/Conferences/Symposiums

Hilborn, R., T. P. Quinn, D. E. Schindler, and D. E. Rogers. 2003. Biocomplexity and fisheries sustainability. Proceedings of the National Academy of Sciences 100 (11):6564-6568.

Published Dissertations and Theses

Matlock, G. C. 1984. A Texas red drum management plan. Doctoral dissertation, Texas A&M University, College Station.

Consultant's Reports

Jones and Stokes Associates Inc. 1987. Southcentral Alaska sport fishing economic study. Final research report, November 1987 (JSA86-0413), Sacramento, CA. Prepared for the Alaska Department of Fish and Game, Division of Sport Fish, Research and Technical Services, Anchorage.

Books

Mayr, E. 1963. Animal species and evolution. The Belknap Press of Harvard University Press, Cambridge, Massachusetts.

Fisheries Rehabilitation, Enhancement and Development (FRED) Division Reports

Alt, K. T. 1979. Inventory and cataloging of sport fish and sport fish waters of western Alaska. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1978-1979, Project F-9-11, 20 (G-I-P), Juneau. http://www.sf.adfg.state.ak.us/FedAidpdfs/fredF-9-11(20)G-I-P.pdf.

REFERENCES CITED FORMAT FOR ELECTRONIC SOURCES

Internet sources must supply the uniform resource locater (URL) for the source. The difficulty here is the constant change in presentation of web material. Try to supply the master, or home page for a document that may be housed in that location on a temporary basis, rather than the document link. Internet citations need to be as thorough as references to paper publications. For an Internet reference to be included, it must be linked to a responsible producing organization or author. Therefore, the first part of the citation should be the name, or the author of the site. This should be followed by the year the information was produced. The author and date are used for the in text citation, using the same format as citations to printed documents. The title and, for documents, the publisher are listed followed by the URL. The preferred format for the URL is hyperlink. Websites subject to discontinuation or frequent changes should be treated as informal or unpublished citations.

If any citation is missing required information, the convention is to provide any clarifying information within square brackets. For Web sites, the date, title or place of production may not be clearly published in the site; however they may be necessary to clarify the citation. Example: A citation to ADF&G commercial catch statistics published on the Web site may contain the title [2003 Preliminary Alaska Commercial Salmon Catches]. The brackets indicate that the information is provided for clarification, and that there is no title bar for the page.

Uniform Resource Locators (URLs)

Avoid editing URLs for style, URLs are case sensitive and punctuation is often perceived to have specific meaning within some markup languages. A common problem with links as part of the reference is the format. Check that the link is working prior to publication.

URLs and Access Dates

While an access date is often considered an optional addition to the reference, it is wise to include such date when the material is time sensitive. The access date should be provided parenthetically at the end of the reference.

Agency publication accessed on the Internet

NWT (Northwest Marine Technology). 2003. Mark IV Instruction Manual automated coded wire tag injector. http://www.nmt.us/products/cwt/mkiv/mkiv_manual.pdf (Accessed November 2007).

The accuracy of electronic citations should be verified as close to the publication date as possible and adjusted if required. If a link ceases to exist before publication, the recommendation is to include the information parenthetically at the end of the citation. If, for example, a link was no longer current, the citation would appear:

NWT (Northwest Marine Technology). 2004. Could the coded wire tag affect the navigation and homing of salmonids? http://www.nmt-inc.com/Applications/CWT/Straying.pdf (Accessed 03/02/2004, site now discontinued).

Document Object Identifier

Permanent source identifiers may become a more commonly found element as the availability of electronic sources grows. This will ease electronic source citations providing a permanent locator for the source. A 'doi' or digital object identifier is available for some online periodicals and when provided it should be included in the citation.

Fontaine, K. M., J. R. Cooley, and C. Simon. 2007. Evidence for Paternal Leakage in Hybrid Periodical Cicadas (Hemiptera: *Magicicada* spp.) Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs. http://www.plosone.org/article/fetchArticle.action?articleURI=info:doi/10.1371/journal.pone.0000892

Databases on the Internet

Title of database. Edition. Place of publication: publisher. Beginning date – ending date (date updated; date cited). uniform resource locator (URL) Notes.

PERSONAL COMMUNICATIONS AND UNPUBLISHED DOCUMENTS

Authors should not include in the reference cited section any report that has not been made publicly available. Document personal communications and unpublished documents within the text of the report, or as a source note in a table. Use *Unpublished* for reports or papers that are not destined for publication. Include the location where the information can be accessed. Confirm and provide the location and availability of the all unpublished source documents and/or data. Unpublished document citation must include essential components; the author or authority for the information, title, identification of the type of information, and location.

Citation guidance has been carefully established for a category originally defined as *personal communications*. In its simplest form, this citation format was designed to cover a direct communication of information from a person close to the subject, not otherwise published. That guidance (in text documentation, including all essential information necessary to verify the material) in our age of ready communication using multiple sources, has expanded to cover many new kinds of source material. Among the personal communication format publications identified by Chicago Manual of Style (CMS 2003) are memos, e-mail communications, data files, working papers, letters, thesis (unless formally published), meeting presentations, and non peer-reviewed material. The personal communication citation format should include the credentials and, if applicable, the affiliation of the source, a clear identifier of the kind of material presented, the date, and location of the author or material. Unpublished reports and data that are primarily housed in an individual agency location should be included as parenthetical in text citations similar to personal communications, and not included in the references cited list.

REFERENCES CITED STANDARD FORMAT DIVISION OF COMMERCIAL FISHERIES SERIES REPORTS

The goal of this section is to provide examples of a citation format that defines each piece of the citation in publications so that a person would be able to construct the reference cited with or without the aid of bibliographic programs like EndNote. It is also important to be able to identify these parts in order to get our EndNote library complete and consistent for each report series. A single citation format can not be broadly applied to these reports because agencies and divisions changed and each report series has a set of unique identifying characteristics.

Informational Leaflet

Meehan, W. R., and J. S. Vania. 1961. An external characteristic to differentiate between king and silver salmon juveniles in Alaska. Alaska Department of Fish and Game, Division of Biological Research, Informational Leaflet No. 01, Juneau.

Fishery Research Bulletin

Fried, S. M., and H. J. Yuen. 1987. A synopsis and critique of forecasts of sockeye salmon (*Oncorhynchus nerka*) returning to Bristol Bay, Alaska in 1987. Alaska Department of Fish and Game, Division of Commercial Fisheries, Fishery Research Bulletin 87-01, Juneau.

Alaska Fishery Research Bulletin

Bouwens, K. A., A. J. Paul, and R. L. Smith. 1999. Growth of juvenile arrowtooth flounders from Kachemak Bay, Alaska. Alaska Fishery Research Bulletin 6(1):35-40.

Statistical Leaflet

Chitwood, P. E. 1960. 1960 Alaska Commercial Fisheries catch and production statistics. Alaska Department of Fish and Game, Statistical Leaflet No. 1, Juneau.

Technical Data Report

McCurdy, M., and R. Paulus. 1972. Bristol Bay sockeye salmon (*Oncorhynchus nerka*) 1968. A compilation of catch and escapement data. Division of Commercial Fisheries, Technical Data Report No. 1, Juneau.

Technical Fishery Report

Cross, B. A., B. L. Stratton, and J. D. Miller. 1992. Origins of sockeye salmon in east side Bristol Bay fisheries in 1989 based on linear discriminant function analysis of scale patterns. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Fishery Report No. 92-03, Juneau.

STANDARD REFERENCES

General: *ADF&G writer's guide.* Second edition (Hicks et al. 1999) is the basic guide for all Department of Fish and Game publications. It is available for online usage at http://www.adfg.state.ak.us/pubs/adfguide/toc.php.

Spelling: The standards for word definition and spelling are *Webster's international dictionary*, and *The American Heritage dictionary of the English language*.

Word Usage: The *Chicago manual of style* (CMS 2003) and *The Gregg reference manual* (Sabin 2001) are the standards for style, usage, and grammar.

Report Format: The most recent edition of the Council of Science Editors *Scientific Style and Format* (CSE 2006) is the standard for general questions related to form, structure, and content of scientific reports.

Fish Species: American Fisheries Society publications *Common and scientific names of fishes from the United States, Canada and Mexico* (Nelson et al. 2004), Special Publication 16, *Common and scientific names of aquatic invertebrates from the United States and Canada: mollusks* (Turgeon et al. 1988) and Special Publication 17, *Common and scientific names of aquatic invertebrates from the United States and Canada: decapod crustaceans*, (Williams et al. 1989) are the standards for scientific and vernacular names of the fishes, mollusks, and crustaceans.

Place Names: *Dictionary of Alaska place names* (Orth 1971) is recognized by ADF&G as the standard for place names within Alaska. For current guidance, refer to Schorr (1991).

Writing: A compilation of articles covering styles, graphics, and forms for scientific writing are gathered in *Writing for fishery journals* (J. Hunter *Editor* 1990) *The elements of style*, *fourth edition* (Strunk and White 2000) is a proven resource.

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ADF&G WRITER'S GUIDE

The remainder of this guide is closely adapted from the *State of Alaska Department of Fish and Game Writer's Guide*, (Hicks et al. 1999), a department-wide collaborative effort undertaken in 1992, with the goal of providing guidance in standard language and writing practices. This guide has always worked in conjunction with specific guides produced for reporting standard practices. We include this material within the *ADF&G Fisheries Scientific and Technical Report Writers Guide* for 4 main purposes:

- As a convenience to authors: it is much simpler to find guidance in one document than to have to search through two. In some cases additional information has been provided that was not contained in the original Writer's Guide. The section on hyphenation provides some further guidance, not on specific terms, but in basic formatting of hyphens and en dashes. In addition, footnotes have been updated to alphanumeric presentations, as is the joint Fisheries convention for tables.
- This guide will provide an indexed and searchable format for the Writer's Guide material, and will provide an economical reprint of the guidance contained in the original.
- This guide will be more directed to the scientific and technical writer. In some cases informational literature for a less technical audience will use different language and conventions than a more formal report. In these cases, our guide will provide the difference (with an explanation that the standard differs from the Guide).
- The scientific community has changed and refined standards and conventions for presentation of numbers. Those new standards are presented in this guide, and borrow heavily from guidance provided in the Council of Science Editors Manual for Authors, Editors, and Publishers (CSE 2006).

SECTION A:
GENERAL AND TECHNICAL COMPOUND WORDS

	Word	Form	Source[a]	Example Usage
A	above-mentioned (before-)	adjective	G (824b)	avoid use of *aforementioned*
	add-on	noun/adjective	A	the *hatchery add-on allowed*
	adipose-clipped	adjective		never abbreviate as "ad-clipped"
	age at maturity	noun	G (831a)	*their age at maturity was*
	age-at-maturity	adjective	G(816a)	*age-at-maturity studies*
	age class (group)[b]	adjective/noun	*(W); R	*One age class was missing*
	angler-day (-hour)	noun	T; G (801)	always hyphenate
	areawide	adjective/noun	G(820b)	*the distribution will be areawide*
B	backwater	adjective/noun	W; A	1 word
	baseline	adjective	* (W)	1 word
	beach seine	adjective/noun/verb		2 words
	benefit-cost (cost-benefit)	adjective	G (806, 818b)	*the benefit-cost ratio*
	bi (words)	prefix	G (833a)	1 word
	bio (words)	adjective/noun	G (835)	almost always 1 word
	boat day	adjective/noun	G (818a)	2 words
	bottomfish	adjective/noun	* (R)	1 word
	bottomwater	adjective/noun	R	1 word
	break up	verb	W	*the ice began to break up in*
	breakup	noun	W; A	*breakup occurred in*
	broodstock	adjective/noun	* (W)	1 word
	brood year[b]	adjective/noun	G (818a)	2 words
	buyback	adjective/noun	R	*encourage a buyback program*
	bycatch	adjective/noun	G (833a); T	1 word – avoid as verb
C	cannot	verb	W; A	1 word
	carryover	noun	A	*the carryover was substantial*
	catch-and-release	adjective/noun	T; G (828)	hyphenate
	catch-at-age	adjective/noun	G (804c)	hyphenate
	catcher-only	adjective/noun	T; G (806)	hyphenate
	catcher–processor	adjective/noun	T; G (806)	hyphenate using en dash
	catch per unit effort	noun	T	always without hyphens
	centerline	noun	R	*the road's centerline*
	charter boat	noun	G (801)	2 words *our charter boat is*
	charterboat	adjective	T	1 word *the charterboat captain*
	checkstation	adjective/noun	T	1 word
	chi-square	adjective/noun	A; R	hyphenate
	cholorophyll *a*	noun	T;	*cholorophyll a was*
	cholorophyll-*a*	adjective	T;	*cholorophyll-a data*

-continued-

General and technical compound words – Page 2 of 9

	Word	Form	Source[a]	Example Usage
C	cleanup	adjective/noun	A	*the oil spill cleanup was a difficult*
	clean up	phrasal	A	*they will need to clean up the*
	clearcut	adjective/noun/verb	R	1 word when used in relation to forests
	clear water	noun	G (801)	*in clear water*
	clearwater	adjective	T	*clearwater species normally*
	co (words)	prefix	G (835)	almost always 1 word (*cochair, coauthor, coworker;* however; *co-owner)*
	coastline	adjective/noun	W; A	1 word
	coastwide	adjective	G (820b)	1 word
	coded wire tag[c]	adjective/noun	T; G (827a)	do not hyphenate
	coded-wire-tag[c]	verb	G (811-812)	*were coded-wire-tagged*
	cold water	noun	W; A	*they occur in cold waters of*
	coldwater	adjective	* (A)	*most coldwater species are*
	crabmeat	noun	R	1 word
	common property	adjective/noun	R; G (818a)	2 words, no hyphen
D	database	adjective/noun	R; A	1 word
	data set[b]	noun	R	2 words
	deep-sea	noun	R	hyphenate
	deep water	noun	W	*they live in deep water*
	deepwater	adjective	W	*these deepwater seines*
	departmentwide	adjective	G (820b)	1 word
	dip net	adjective/noun		2 words
	dipnet	verb		1 word
	dipnetter	noun		1 word
	divisionwide	adjective	G (820b)	1 word
	downriver (downstream)	adjective/adverb	W; A	*the downriver camp is*
	driftnet/driftnetter	adjective/noun/verb		1 word
	drift gillnet/drift gillnetter	adjective/noun/verb		2 words
E	early run	noun	G (801)	*the early run was*
	early-run	adjective	G (816a, 814)	*the early-run ages were*
	ear tag	noun	G (801)	*the ear tag read*
	eartagged	verb/adjective	* (W)	*they eartagged the bears*
	east side	noun	G (801)	*fisheries on the east side*
	eastside	adjective	W	*eastside catch was*
	egg take	noun	G (801)	*the egg take was started on*
	egg-take	adjective	G (816a, 814)	*the egg-take operations will continue*
	elect	adjective	G (808b)	*Governor-elect Smith*
	e-mail	noun	W	*communidated via e-mail*
	electrofishing	verb		1 word
	even-year	adjective	G (816a, 814)	*the even year returns are*
	ex-	adjective	G (808b)	*ex-President Bush*
	exvessel	adjective	T	1 word
F	*F*-test	adjective/noun/verb	T	hyphenate/italicize *F*
	field test	noun	* (R)	*conduct a field test*
	field-test	verb	A	*to field-test the equipment*

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General and technical compound words – Page 3 of 9

	Word	Form	Source[a]	Example Usage
F	fieldwork	noun	A;R	*budget expenditures on fieldwork*
	finclip	adjective/verb	T	1 word
	finfish	adjective/noun	W; A	1 word
	fish farming[b]	adjective/noun	R	2 words
	fish ladder[b]	adjective/noun	W; R	2 words
	fish meal[b]	adjective/noun	W	2 words
	fish pass[b]	adjective/noun	T; G (818a)	2 words
	fishpound	adjective/noun		1 word
	fish trap	noun		2 words
	fish-trap	adjective		hyphenate
	fishway	noun	W	1 word
	fish wheel[b]	adjective/noun	W; R	2 words
	fixed-wing	adjective	R	hyphenate
	fly-fishing	adjective/noun	A; R	hyphenate
	follow-up	adjective/noun	G (815a)	*project follow-up was*
	followed up	verb		*he followed up with a letter*
	food/bait fishery	adjective	T; G (295a)	*the food/bait herring fishery*
	fork length	adjective/noun	W	2 words
	fork-of-tail	adjective/noun		hyphenate
	former	adjective	G (1101)	*former President Reagan*
	freeze-up	noun	W	*freeze-up occurred in*
	fresh water	noun	G (801)	*most live in fresh water*
	freshwater	adjective	W; A	*most freshwater species*
	full time	noun	W; R	*worked the full time allowed*
	full-time	adjective/adverb	W; R	*all worked full-time days*
	furbearer	noun	W; A	1 word
	fyke net	adjective/noun		2 words
G	gillnet	noun		*the set gillnet was ripped*
	gillnet	adjective		*the drift gillnet catch was*
	gillnet	verb		*having gillnetted 2,000 lbs*
	goodness of fit	noun	T; G (801)	*goodness of fit was examined*
	goodness-of-fit	adjective	T; G (831a)	*goodness-of-fit analysis*
	groundfish	adjective/noun	W	1 word
H	hand-held	adjective	A; G (816a, 814)	*the hand-held unit was*
	handmade	adjective/adverb	A; W	1 word
	handwritten	adjective	R	1 word
	hand troll/ hand troller	adjective/noun/verb		2 words
	harvest per unit effort	adjective/noun	T	without hyphens; *the harvest per unit effort*
	hard-on-bottom	adjective	T	*hard-on-bottom trawling*
	haulout	noun	T; G (803d)	1 word
	haul seine/haul seiner	adjective/noun/verb		2 words
	headwaters	noun	W; A	*the headwaters originate*
	herring pound	adjective/noun	*	2 words
	high-ranking	adjective	G (822a)	hyphenate
	high seas[b]	adjective/noun	R; W	2 words

-continued-

General and technical compound words–Page 4 of 9

	Word	Form	Source[a]	Example Usage
H	homemade	adjective/adverb	A; W	1 word
	home page[b]	adjective/noun	A; G (801)	2 words
	home port[b]	adjective/noun	W; R	2 words
	hydroacoustic[i]	adjective/noun	T	1 word
I	in-depth	adjective	A; R	hyphenate
	in-house	adjective	A; R	hyphenate
	inriver	adjective	G (833a)	1 word
	in season	noun	G (801)	*the strategy in season*
	inseason	adjective	* (W)	*the inseason strategy*
	inshore	adjective	W; R	1 word
	in-state	adjective/noun	G (837)	meaning within the state
	instate	verb	W; R	meaning to install
	instream	adjective	G (833a)	1 word
	intertidal	adjective	R; A	1 word
L	lakeshore	adjective/noun	A; R	1 word
	landing net	noun		2 words
	landlocked	adjective/noun	W; A	1 word
	landowner	adjective/noun	W; A	1 word
	late run	noun		*the late run was*
	late-run	adjective		*the late-run ages were*
	lay off	verb	W	*they will lay off 3 people*
	layoff	adjective/noun	W; R	*layoffs will occur*
	legal-size	adjective	G (801)	*legal-size crab were*
	legal size	noun	W; A; R	*crab of legal size were*
	length-at-age	adjective/noun	G (804c)	hyphenate
	length–weight	adjective/noun	G (818b)	hyphenate with en dash
	life history[b]	adjective/noun	G (801)	2 words
	life stage[b]	adjective/noun	G (801)	2 words
	limited entry	adjective/noun	T; G (801; 818a)	2 words
	lingcod	adjective/noun		1 word
	longline/longliner	adjective/noun/verb		1 word
	long-term	adjective	W; A; R	*long-term impacts are*
	long term	noun	G (801)	*in the long term*
M	mainstem	adjective/noun	T	1 word
	man-hour/man-month	noun	W; A; G (806)	hyphenate – avoid (gender specific)
	mark–recapture	adjective	G (806, 811a)	hyphenate with en dash
	mark–recovery[c]	adjective	G (814, 816a)	hyphenate with en dash
	mark–sense	adjective		*the mark–sense forms*
	mark sensing	noun		*mark sensing is the process*
	mid[d]	adjective	R	see footnote [d]
	mid eye to tail fork[e]	adjective/noun	G (801)	*lengths from mid eye to tail fork*
	midpoint	adjective/noun		1 word

-continued-

General and technical compound words–Page 5 of 9.

	Word	Form	Source[a]	Example Usage
M	minnow trap	noun		2 words
	minnow-trap	adjective		hyphenate
	mixed stock[b]	adjective/noun	T; G (818a)	2 words
	moving average[b]			
	multi (words)	adjective/noun	W; G (833a)	almost always 1 word
N	nearshore	adjective	W; R	*the nearshore fishery was*
	net pen	noun	G (801)	*fry reared in net pens are*
	net-pen	adjective	G (814, 816a)	*net-pen rearing was*
	new-shell/old-shell	adjective	G (816a)	use only as an adjective
	newsworthy	adjective	W; A	1 word
	non	prefix	R; G (833a,	usually 1 word
	nonpermanent	adjective/noun		1 word
	nonresident	adjective/noun		1 word
	non-Alaskan[f]	adjective/noun	G (838)	hyphenate
	nonindigenous[f]	adjective	G (833a)	nonindigenous stock
	non-Native[f]	noun	G (838)	hyphenate when referring to nonaboriginal peoples
	nonnative[f]	adjective	W; G (833a)	*is a nonnative species in*
	nonnavigable[f]	adjective	G (833a)	*in nonnavigable waters*
	nonrural	adjective	G (833a)	1 word
	nonsubsistence	adjective	G (833a)	1 word
O	odd-year	adjective	G (816a)	*the odd-year returns were*
	off-road	adjective	A	hyphenate
	offshore	adjective	W; A	*the offshore fishery was*
	off-site	adjective	A	*off-site analysis*
	old growth	noun	G (801)	*the old growth is*
	old-growth	adjective	G (816a)	*old-growth forests displayed*
	on board	adverb	G (831a)	*the man was on board when*
	onboard	adjective	A; R	*onboard processors will*
	ongoing	adjective	W; A	1 word
	online	adjective	* (A)	1 word
	onshore	adjective	W; A	*the onshore team set up*
	on-site	adjective	A	*on-site investigation*
	outmigrate[g] (emigrate)	verb	*(A); G (833a)	*salmon outmigrate when*
	outmigrating[g] (emigrating)	adjective	*(A)	*the outmigrating fry were*
	outmigration[g](emigration)	noun	*(A)	*during the outmigration*
	overfish, overwinter, overharvest, overescapement,etc.	verb	W; G (833a)	1 word
P	*P*-value	adjective/noun	T	hyphenate/italicize *P*
	parent year	noun	G (801)	*the parent year was 1982*
	parent-year	adjective	G (814)	*parent-year escapements were*
	part-time	adjective/adverb	W; G (816a)	*offered a part-time position*
	passthrough	adjective/noun	R	*passthrough funds were*
	paycheck	noun	W; A	1 word
	payday	noun	W; A	1 word

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General and technical compound words–Page 6 of 9.

	Word	Form	Source[a]	Example Usage
P	personal use	adjective/noun	G (818a)	2 words
	placename	noun	R	1 word
	postaudit or preaudit	noun	W; G (833a)	1 word
	postseason or preseason	adjective/noun	W; G (833a)	1 word
	poststatehood or prestatehood	adjective/noun	G (833a)	1 word
	pot lift[b]	adjective/noun	G (801)	2 words
	power troll/power troller	adjective/noun/verb		2 words
	preemergent/preemergence	adjective/noun	W; G (833a,	1 word
	prerecruit or postrecruit	adjective/noun	G (833a)	1 word
	prerelease	adjective/noun	W; G (833a)	1 word
	presmolt	noun	G (833a)	1 word
	proofread	verb	W; R	1 word
	purse seine/purse seiner	adjective/noun/verb		2 words
	put-and-take[g]	adjective/noun	G (828b, 831b)	hyphenate
Q	quasi[d]	adjective	R	see footnote [d]
R	radio collar[h]	adjective/noun	G (801)	*the radio collar batteries*
	radiocollar[h]	verb	T; G (811a)	*we radiocollared caribou*
	radio-tag[h]	adjective		hyphenate as adjective
	radio tag[h]	noun	G (801)	not hyphenate
	radiotagged[h]	verb	T; G (811a)	we radiotagged
	radiotelemetry[h]	noun	T; G(811a)	1 word
	radiotracking[h]	noun/verb	T; G (811a)	radiotracking was tested
	radiotracked[h]	adjective/verb	T; G (811a)	we radiotracked the bears
	reef fish[b]	noun	* (R)	2 words
	regionwide	adjective	G (820b)	1 word
	return-at-age	adjective/noun	G (804c)	hyphenate
	returns per spawner	noun	G (815a)	*when returns per spawner are known*
	return-per-spawner	adjective		*return-per-spawner analysis*
	riverbank	noun	R	1 word
	riverbed	noun	R	1 word
	river mile	adjective/noun	T	Always 2 words
	river mouth	noun	G (801)	*fish at the river mouth were*
	river-mouth	adjective	G (816a)	*river-mouth fisheries*
	roadside	adjective/noun	W; R	*a roadside attraction*
	rockfish	adjective/noun		1 word
	rod hour	adjective/noun	G (818a)	2 words
	roundtrip	adjective/noun	A	1 word
	rulemaking	noun	T	1 word
	run of origin	noun	G (831a)	*we determined run of origin*
	run-of-origin	adjective		*run-of-origin determinations*
S	sac roe[b]	adjective/noun	G (818)	2 words
	salmon (ocean) ranching[b]	noun	G (801)	2 words
	salt water	noun	W; A	*live in salt water*
	saltwater	adjective	W; A	*saltwater species may*

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General and technical compound words–Page 7 of 9.

	Word	Form	Source[a]	Example Usage
S	same-day-airborne[g]	adverb	T	hyphenate
	scale pattern[b]	adjective/noun	T; G (818a)	2 words
	sea duck[b]	adjective/noun	W; A	2 words
	sea-fresh	adjective/verb	G (811a, 813)	hyphenate
	seagoing	adjective	W; A	*seagoing trout are*
	sea run	noun	G (801)	*the sea run was less*
	sea-run	adjective	W	*sea-run cutthroat trout are*
	seawater	adjective/noun	W; A	1 word
	seedstock	adjective/noun	* (W)	1 word
	setnet	adjective/noun/verb		1 word
	set nets	noun		*use of set nets is not*
	set gillnet/set gillnetter	adjective/noun/verb		2 words
	shallow-water	adjective/noun		
	shell-aging[g]	adjective	G (811a)	hyphenate
	shellfish, shellfishery	adjective/noun	W; A	1 word
	shorebased	adjective	T	1 word
	shoreline	noun	W; A	1 word
	short term	noun	R; W	in the short term
	short-term	adjective	W	hyphenate
	size (sex) selectivity	noun	G (815a)	*indicated size selectivity was*
	size-selective	adjective/noun	G (820a)	hyphenate
	size-selectivity	adjective		*size-selectivity bias was*
	skip molt	noun	G (801)	*skip molts are usually*
	skip-molt	adjective/verb	G (811a. 816a)	*skip-molt crabs are*
	snow cover	noun	A	*less snow cover*
	snow line	noun	A	*above the snow line*
	soak-hour	adjective/noun	G (809a)	hyphenate
	socioeconomic	adjective	W; G (833a)	*the socioeconomic trend*
	soft shell	noun	G (801)	*soft shells were found*
	soft-shell	adjective	W; A	*soft-shell crab were*
	sonar words[i]		T	see footnote [i]
	spawn on kelp (or roe)	noun	G(831a)	*spawn on kelp was harvested in*
	spawn-on-kelp (or roe)	adjective		*the pound spawn-on-kelp fishery*
	spike-fork	adjective/noun		hyphenate
	sport fish	adjective/noun		2 words
	sportfishing	adjective/noun		2 words *(not sports fishing)*
	standby	adjective/noun	W	1 word
	statewide	adjective		1 word
	streambank	noun	T	1 word
	streambed	noun	T	1 work
	stream life	noun		*the stream life was*
	stream-life	adjective		*stream-life studies*
	stock of origin			see run of origin
	subarea	adjective/noun		1 word
T	tag-recovery[c]	adjective	G (814,816a)	use an en dash
	tar balls[b]	noun	R	2 words

-continued-

General and technical compound words–Page 8 of 9.

	Word	Form	Source[a]	Example Usage
T	test net	noun		2 words
	test-net	adjective		hyphenate
	thermal mark(ing)[c]	adjective/noun	G(827a)	2 words no hyphen
	tideland	adjective/noun	W;A	
	tidemark	adjective/noun		
	tidewater	adjective/noun		
	tideway	adjective/noun		
	time frame[b]	noun	A,R	2 words
	time line			
	time series[b]	adjective/noun	W,R,G (818a)	2 words
	townet	adjective/noun	W	1 word
	t-test	adjective/noun		hyphenate – italicize *t*
	turn around	verb	W	*when you turn around*
	turnaround	adjective/noun	W:R	*the sudden turnaround caused*
				the turnaround time for the project
U	underescapement	noun	G (833a)	1 word
	underway	adjective	W;R	1 word
	unitwide	adjective/noun	G(820b)	1 word
	unoiled	adjective	W	1 word
	upriver	adjective/adverb	W;A	1 word
	up to date	noun	G	*the data were up to date*
	up-to-date	adjective		*the up-to-date data*
	U.S./Canada	adjective		use periods and slash
W	water body[2]	noun		2 words
	watershed	adjective/noun		1 word
	waterbourne			
	watercourse			
	watercraft			
	waterland			
	web site	noun	G (801)	2 words
	westside			(see eastside)
	widespread	adjective	W;A	1 word
	wild stock	adjective/noun	T	1 word
	wild type	noun	R, A	*the wild types are*
	wild-type	adjective		*wild-type descriptions*
	workday	noun	W:A	1 word
	worker-hour (-month)	noun	G(806a)	hyphenate
	workload	noun	W	1 word
	work station[2]	noun	R	2 words
Y	year class	adjective/noun		2 words
	yolk sac	noun		*the yolk sac was*
	yolk-sac	adjective		*the yolk-sac fry were*
	young of the year	adjective/noun	T:G (818c)	do not hyphenate

-continued-

Source for table: Modified from Hicks et al. 1999.

[a] A The American Heritage Dictionary of the English Language, 3rd edition.
G The Gregg Reference Manual, 9th edition. The number in parenthesis is the section number in Gregg.
R Random House Unabridged Dictionary, 2nd edition.
T The word is not in the dictionary. This spelling is consistent with common technical usage or similar terms.
W Webster's Third New International Dictionary.
* The word is in the dictionary (as indicated by the parenthetic letter), but we decided not to use the dictionary spelling because it does not appear consistent with established usage within the profession or is inconsistent with similar terms also in the dictionary.

[b] Do not hyphenate established common compound words, like *mixed stock or brood year,* when they serve as adjectives (e.g., *mixed stock fishery;* Gregg 818.a); nor are they hyphenated when they are joined with a participle to form an adjective (e.g., *mixed stock-related failures).* The section on Hyphenation Helps provides more guidance.

[c] Some stand-alone adjectives modify established compound nouns; *with gifted public oratory,* for example, *gifted* modifies *public orator* (it is not *gifted public* that modifies *orator).* Likewise, *thermal mark code* or *thermal marking system* are not hyphenated because *thermal* presumably modifies *mark codes* or *marking system.* Likewise, in noun/adjective use *coded* modifies *wire tag* and is not hyphenated. But as a verb it is really *coded wire tag-tagged,* but *tag is* dropped to avoid needless redundancy, hence, *coded-wire-tagged;* if you have introduced the CWT abbreviation, you may use *CWT-tagged* (but never CWT'd). Another and often better verb is simply *tag/tagged.* However, with *mark–* or *tag–recovery data,* there is an en-dash (denotes equal terms) because the compound is modifying *data, so* it would then become *thermal mark–recovery data.*

[d] *Mid* is a stand-alone word and combining form. *Random House Unabridged* lists a large number of compound (combining form) *mid* words. Most noun forms are now combined as one word; some we frequently use include *midafternoon, midcourse, midday, midgut, midleg, midline, midmorning, midnight, midpoint, midrange, midship, midstream, midsummer, midway, midweek, midwinter,* and *midyear.* If you must use *a mid* compound not listed here, first consult *Random House.* Then, if you cannot find the compound, follow this general rule, as derived from *Gregg* (Section 816a) and *Random House.* Use mid in the same way you would *early/late* or *upper/lower;* that is, hyphenate *mid* when it is a compound adjective, but not when it is a single, stand-alone adjective. For example, *we took the mid-depth samples,* but *we took samples at mid depth; or in the mid 1980s we ... but the mid-1980s harvests ....* If you use 2 time frames joined by the word *and,* be careful to balance each reference to time (e.g., *late spring and mid autumn; never late spring and mid fall). Quasi is* a stand-alone adjective used to modify nouns *(quasi contract, quasi population). Quasi is also a* combining form that is hyphenated to form an adjective or adverb *(quasi-essential, quasi-legal, quasi-normally).*

[e] Introduce mid eye to tail fork as an abbreviation at first mention and for adjectival use, such as *...lengths from mid eye to tail fork (METF) were* ...then *...METF lengths averaged....* Avoid using *mid-eye-to-tail-fork lengths.*

[f] Words with the "non" prefix are seldom hyphenated unless they are combined with a word that normally begins with an uppercased proper name (e.g., non-Togiak).

[g] Jargon - consider using another term, or you may need to introduce and explain the term on first use unless addressing an audience familiar with the term.

[h] Authors are asked to first check any words beginning with *radio* in the dictionary. If not in the dictionary, then spell *radio* words that are verbs as 1 word, e.g., *radiocollar, radiotag, radiotrack,* etc. The nouns *radio collar* and *radio tag* are spelled as 2 words because they refer to objects *(collars* and *tags),* not a process *(radiocollaring, radiotagging).* Nouns serving as adjectives should retain their noun form *(radio wave pattern)* but participial adjectives should be one word *(radiocollared bear, radiotagging analysis).*

[i] Sonar equipment has produced a number of compound words. As nouns, these should be 2 words, but as adjectives hyphenate *wide-beam echoes, parallel-beam study, side-scan sonar, pan-and-tilt transducer, cross-sectional area, dual-channel recorder, thermal-chart recorder.*

SECTION B: FISHING GEAR

Noun	Adjective	Verb	Noun
		Net words	
dip net	dip net[a]	(to) dipnet[a]	dipnetter
drift gillnet[a]	drift gillnet[a]	(to) drift gillnet[a]	drift gillnetter[a]
driftnet[b]	driftnet[a]	(to) driftnet[a]	driftnetter[b]
fyke net	fyke net[a]	NA	NA
gillnet[b]	gillnet[a]	(to) gillnet	gillnetter[b]
landing net	NA	NA	NA
set gillnet[a]	set gillnet[a]	(to) set gillnet[a]	set gillnetter[a]
setnet	setnet[a]	(to) setnet[a]	setnetter[a]
test net[a]	test-net[a]	NA	NA
trammel net	trammel net[a]	NA	NA
		Trap words	
fish trap	fish-trap[a]	NA	NA
minnow trap[a]	minnow-trap[a]	NA	NA
		Troll words	
NA	hand troll[a]	(to) hand troll[a]	hand troller[a]
NA	power troll[a]	(to) power troll[a]	power troller[a]
		Seine words	
beach seine	beach seine[a]	(to) beach seine[a]	NA
haul seine	haul seine[a]	(to) haul seine[a]	haul seiner
purse seine	purse seine[a]	(to) purse seine[a]	purse seiner
		Miscellaneous terms	
crab pot[a]	crab pot[a]	NA	NA
fishpound	fishpound[a]	NA	NA
fish wheel	fish wheel[a]	NA	NA
herring pound[a]	herring pound[a]	NA	NA
longline	longline[b]	(to) longline[a]	longliner[b]

Note: NA means that it is inappropriate to use the word in this manner/form.

[a] Not in the dictionary: Webster's, Random House, or American Heritage.

[b] Word was in the dictionary other than as shown here, but the ADF&G Writers Committee opted to depart from the dictionary form. In such instances, the committee believed that the dictionary form was not up to date, and opted for a form more contemporary or consistent.

SECTION C: CAPITALIZATION HELP

	Word	Source[a]	Capitalization Examples
A	Arctic[b]	C(7.36); G (332)	*Arctic/arctic[b] weather is* *the Arctic Circle is* *wildlife is abundant in the Arctic*
	Arctic grayling/char		always capitalized; proper name
	Arctic-Yukon-Kuskokwim[b]		*The Arctic-Yukon-Kuskokwim stream*s
	attorney general[c]	G(312,313)	*Attorneys General Johnson and Smith* Otherwise lowercase; the attorneys general met
B	bay (*see sound*)		
	board[d]		*The board listened to; The Board of Game listened to*
C	capital improvement projects	G(306;C(7.49)	*capital improvement projects are*
	Central Alaska[e]	C(7.36); G (341)	*in Central Alaska there are* *the Central Region has*
	commissioner[c]	C(7.18); G(312)	*Commissioner John Smith spoke* *John Smith, commissioner of* *The commissioner will not attend.*
	Congress	G(325)	Uppercase
	constitution	G(346)	Lowercase unless proper name: U.S. Constitution, or Constitution of the State of Alaska
	council[d]		same as board; see above
D	department[d]		*Department of Fish and Game staff* *The department recommended* *The Department closed the fishery*
	director[c]		same as commissioner; see above
	district		*The district catch was* *The District 15 catch was* *The Security Cove District catch was*
	division[d]		same as department; see above
	Dolly Varden		always; proper name
	drainage		always lower case
	Dungeness crab		always; proper name
E	east	G(338)	(placename) *cities in the East are* (compass direcction) *the sun rises in the east*
	eastside[e]	C(7.39); G(338)	(popular proper name) *the Eastside gillnet fishery* (noun) *the gillnet fisheries on the east side* (adjective) *the eastside gillnet fisheries*
	elect	G(317)	*he was the governor-elect* (always lowercase)
	emergency order	G(346)	*Emergency Order 1-Y-10-87 was* *the emergency order closed the*
	ex-	G(317 and 1101)	*ex-Governor Murkowski* - see section D: ex/former) *the ex-governor left office on*
F	federal	G(328,329)	*accordingly, the federal government recommended* *the Federal Reserve Board lowered*

-continued-

Capitalization help – page 2 of 3.

	Word	Source[a]	Capitalization Examples
F	federal aid	G(328)	Not capitalized unless used with proper title of program; i.e., *Federal Aid in Fish Restoration* (can introduce an abbreviation)
	federal aid contracts	G(328)	*we mailed the federal aid contracts*
	fiscal year	G(308)	*the fiscal year will end*
	fish and game fund	G(308)	*support from the fish and game fund*
	fishery	C(7.41)	*when the gillnet fishery was* *when the False Pass fishery was*
	fund	G(308)	when referring to fiscal funds with the state budget, use lowercase: *fish and game fund*
G	general fund	G(308)	*the general fund shortfall*
	governor[c]		*John Wilson, the governor of* *Governor Wilson was* *the governor signed the law*
I	Inside Passage	C(7.36); G(333a)	*the ship traveled the Inside Passage*
	Interior Alaska	C(7.36); G(333a)	*species in Interior Alaska* *the Alaska Interior is largely* *the Interior is largely*
	Internet	G(303)	*Internet users were increasing*
L	legislature		same as department; see above
	lower[f]	G(337); C(7.36)	*stocks in the Lower Yukon are* *in the lower portion of the Yukon*
N	native		*natives of Alaska* (those born in Alaska) *stocks native to this area were*
	Native		For indigenous inhabitants use:Native American(s)or Alaska Natives
		G(348)	For indigenous inhabitants use:Native American(s)or Alaska Natives
	north		see east
	North Pacific/Atlantic	C(7.36);G(341)	*North Pacific populations are*
	northern Alaska[e]	C(7.36);G(341)	*the northern Alaska climate is*
	northern Pacific Ocean[e]	C(7.36);G(341)	*those in the northern Pacific Ocean*
	North Slope[c]		*The North Slope terrain is*
P	Pacific cod/halibut		Proper name, capitalize
	Pacific Northwest	C(7.36);G(341)	*The Pacific Northwest experiences; in the northwestern Pacific*
	Pacific rim	C(7.39); G(333a)	*dealing with Pacific rim countries*
R	range	G(303,331); C(7.49)	*the Delta Bison Range was* *the range east of Tok*
	Region	C (7.40)	*the Central Region has*
	Relative Stock Density		always capitalized
	river	C, CSI	*the Chilkat and Chilkoot rivers flow*[f] *the Chilkat River*
	river mouth or system/basin[g]		*the Yukon river system* *the Yukon river mouth*
S	scuba	G (522a)	no longer capitalized
	sound	G (331)	*the Prince William Sound harvest* *oil deposits in the sound were*
	Southcentral Alaska[e]	C(7.36);G338,341)	*fisheries in southcentral Alaska are* *Southcentral fish populations are*
	Southeast Alaska[e]	C (7.36);G338,341)	*The Southeast Alaska anglers were/* *fish in southeastern Alaska are* *fish in Southeast are*
	state	C(7.40)	*and the state (or State) of Alaska was*[i]

-continued-

Capitalization help–page 3 of 3.

	Word	Source[a]	Capitalization Examples
S	state[j]		*the state of Alaska was*
			however, *New York State was*
	stock	G(309b)	*the Togiak stock entered the*
T	Tanner crab		always; proper name
	trans-Alaska pipeline	Alyeska	*the trans-Alaska pipeline opened*
	treaty	G(346a)	lowercase unless part of title
U	upper[h]		*stocks in the Upper Yukon are*
			in the upper portion of the Yukon
V	village	G (334)	*the location of the village of Kobuk* (not part of proper name);
			however, *Kobuk Village employment* (part of proper name)
W	weir		*the Chilkat River weir was*
	west		same as east
	westside		same as eastside (see above)
	Westward	G(332)	*in the Westward Region there are*
			in Westward there are
	World Wide Web	G(303)	always capitalize

Source: Modified from Hicks et al. 1999.

[a] C=The Chicago Manual of Style (CMS 2003). The section number is in parenthesis.
G=The Gregg Reference Manual (Sabin 2005). The section number is in parenthesis.

[b] When referring to the region, capitalize (e.g. "Arctic weather" meaning weather in the Arctic): when used as an adjective aligned with cold, lowercase (e.g. "arctic weather, meaning frigid).

[c] Do not customarily capitalize titles of state officials when used alone (e.g., *commissioners, senators, attorneys general),* except when title is part of the individual's name (e.g., *Director Green).* These titles alone may be capitalized when there is a need for special emphasis; however, be consistent. Capitalize most high-ranking federal titles.

[d] Normally, words like *board, division, department, village,* and *council,* when used alone as a common name, are not capitalized. However, for some audiences it may be capitalized when the full authority of the agency is to be emphasized, such as *Council* for NPFMC in certain correspondence. Whether upper or lowercase, be consistent within a document (for more discussion see *Gregg,* sections 326 and 327).

[e] Nonspecific (unbounded) regions or areas of Alaska and similar proper geographic names are generally lowercased - e.g., *central Brooks* Range; *southeastern, western, and northern Alaska; northern Pacific Ocean.* However, some regions, especially those with geographic distinctiveness, have developed placename status; these include *Southeast Alaska, Interior* Alaska *(the Interior), Central Alaska,* and *Southcentral* Alaska. ADF&G administrative regions are always capitalized because they are proper names: *Southeast Region, Central Region, AYK Region, Westward Region.*

[f] Uppercasing of words like *upper, lower, middle*, etc., depends on whether they are part of an actual placename or simply denote a general area or location. If, for example, the up-river area of the Yukon River had established boundaries representing a very specific region of the river, then *Upper Yukon* would be appropriate. If it was more of a general area, then it would be best to use *upper Yukon.* The same holds true for *west side* and *east side.*

[g] This is a correction to the Writer's Guide (see CSE 2006, p.183).

[h] Although *river* can be a common noun (lowercase) or part of a river's proper name (upper-case), *river system, river* basin, or *river mouth* are only compound common nouns (lowercase) and are never part of a river's proper name. Therefore, in the example, *Yukon* is a proper-name adjective (uppercased) modifying the common compound noun *river system* or *river mouth* (lowercased); note that *Yukon is* actually a truncation of *Yukon* River to avoid redundancy-i.e., the *Yukon* River *river system (river mouth).* The proper name *River* is dropped rather than the common name *river.*

[i] Use "state of Alaska" for all uses except when referring specifically to the governmental body; for example, *"The State of* Alaska is *considering a comprehensive health plan for residents,"* or *"The State of Alaska must place at least 25 percent of all oil royalties in the permanent fund."* The short form, *state* alone, should not be capitalized unless the lack of capitalization would produce ambiguity (where both government and geographic area are referred to in the same document).

SECTION D: COMMON WRITING MISTAKES

affect/effect

Affect is normally used as a verb meaning to influence, change, or modify.
Effect is normally a noun; it is also a verb meaning to bring about.

Examples *...which affected the decision to extend the* (meaning to influence)
...this will effect a restructuring of the (meaning to bring about)
...the regulation takes effect on
...which has had a major effect (noun)

aging

Although commonly used in biological writing, aging is not recognized by any dictionary as meaning *the determination of age*, so the public and international audiences may interpret the word to mean *the process of growing older*, which is the dictionary definition. Therefore, use "aging" with caution, or define parenthetically on first mention. Also, the British spelling, *ageing*, is not recommended.

allocate/apportion

Use these words when you or others do the apportioning or allocating (e.g., *allocation* plans for fisheries). Do <u>not</u> use when you are trying to estimate the proportions or parts of a natural population (e.g., "…the run was *allocated* to stock by") because we are not allocating/apportioning the parts or components of the population, but the populations themselves. Instead use a construction such as "We *estimated* stock portions of the run to be…"

all right/alright

Like *all wrong*, the expression should be spelled as 2 words. *Alright* is incorrect.

alternate/alternative

The verb *alternate* describes the successive passage back and forth from one state, action, or place to another, and the corresponding adjective conveys the same sense. The noun and adjective *alternative* represent a choice between 2 or more mutually exclusive states or places.

Examples *The water alternates between liquid and solid states…*
The alternate states were liquid and solid…
*We rejected the alternative hypothesis (*a choice between two mutually exclusive options)

among/between

Use *among* when comparing 3 or more. Use *between* when comparing 2.

appraise/apprise

Appraise means to evaluate; *apprise* means to inform.

as

s*ee because*

as/like

Like is correctly used as a preposition. Although *like* is widely used as a conjunction in colloquial speech, use *as*, *as if*, or a similar expression in written material.

Examples *Duck hunting, like deer hunting, requires a great deal of skill*
The moose calf looks as if it hasn't eaten in days.

assure/ensure/insure

All three words have essentially the same meaning. However, when referring to financially guaranteeing life or property, use *insure* exclusively. *Assure* should only be used when it refers to a person (e.g., to assure someone). Use these 2 words only in these limited senses. In most of our writing, therefore, *ensure* will be the correct choice.

Examples To set a person's mind at ease:
I assure you we will finish on time.
To make certain:
I want to ensure we do this correctly.

awhile/a while

The meaning of *awhile* is for a period; the "for" notion is part of the meaning. Consequently, it is redundant to write, "The policy will work for awhile." (A preposition, normally "for," can introduce *a while*, but must not be used to introduce *awhile*.)

Examples *The policy will work awhile.*
The policy will work for a while.

because/as/since

Do not use *as* or *since* as synonyms for *because.* Use only in a temporal sense.

Examples Avoid: *...was closed since/as the population levels were*
Use: *...was closed because population levels were*

(Note: In the first example you need the rest of the sentence to determine whether *since* has a temporal meaning or is being used as a synonym for *because.* Ambiguity is not evident in the second example, so using *because* simplifies reading.)

bi/semi

Bimonthly and *biweekly* can either mean "every 2 months/weeks" or "twice a month/week." *Semimonthly,* on the other hand, means "twice a month." The use of these terms often creates ambiguity, and if there is a possibility that their meaning is not clear, the terms should not be used. If the words must be used, use *bimonthly/biweekly* for "every 2 months/weeks" and *semimonthly/semiweekly* for "twice a month/week." Also, note that *biannually* means " 2 times a year" and *biennially* means "every 2 years."

bycatch

Use only as a noun or adjective. Never use as a verb *(crab bycaught in cod pots);* instead use *incidentally harvested.*

commercial fishery

Traditionally, the term *commercial fisherman* has included those who compete to catch and sell fish (e.g., trollers, seiners, setnetters, and crab fishermen). This usage is to be retained. More recently, an additional group of harvesters has been recognized: private nonprofit hatchery operators, derby operators, and even the State of Alaska (sells confiscated fish or fish taken in test fisheries). These other harvesters, although authorized to sell fish, do not compete among themselves or with commercial fishermen. Therefore, they are not, in the traditional sense of the word, commercial fishermen. Although their harvests are commercial because they are sold, we do not want to refer to them as commercial fishermen nor represent them as participants in a commercial fishery because it would bend established meaning and cause confusion, requiring needless explanation. Therefore, the following terms should be used when it is necessary to refer to these types in a collective sense:

Harvest Terms:
Commercial fishery harvest + other commercial harvests = total commercial harvests

Note: When additional clarity is needed, the term *commercial common property harvest* can be used instead of *commercial fishery harvest.*

Fishery Terms:
Commercial fishery + other commercial harvest operations = (no aggregate term)

Participant Terms:
Commercial fishermen + other commercial harvesters = (no aggregate term)

(Note: Both commercial fishermen and other commercial harvesters can sell fish only under a Commercial Fisheries Entry Commission (CFEC) card or license unique to their particular type of taking. For example, trollers, derby operators, and hatchery operators each have their own unique CFEC card.)

complement/compliment

Complement means "something that completes or brings to perfection."
Example *These findings complemented their study.*

Compliment means "an expression or act of courtesy or praise."
Example *He complimented Tim on his brilliant speech.*

comprise/compose

Comprise means to include, contain, consist of, *compose* means to make up. The parts compose (make up) the whole; the whole comprises (includes) the parts; the whole is composed of (NEVER is comprised of) the parts.

Examples *ADF&G comprises (consists of) 6 major divisions.*
Six *divisions compose* (make up) *ADF&G.*
ADF&G is composed of (is made up *of) or comprises* (includes) *6 divisions.*

continual/continuous

Continual means "intermittent, but frequently repeated." *Continuous* means "without interruption."

Examples *He has continually argued for project funding*
The need to provide sustainable fisheries is continuous.

data/database

A *database* is a collection of relational information (such as a computer file or printed document) containing data organized for retrieval and analysis and representing a conceptually coherent subject. The plural noun *data* refers to individual items of information. In formal writing (and always in the sciences), use *data* as a plural.

Note: this is a content addition, not contained in the Writer's Guide (Hicks et al. 1999) inserted here to address a common question of usage by writers of technical reports.

different from/different than

Use *different from* when the comparison is between 2 persons or things (e.g., *My report is different from yours).* Use *different than* when the object of comparison is expressed by a full clause (e.g., *The department is different than it was 20 years ago).*

discreet/discrete

A discreet person is cautious and prudent and exercises good judgment. *Discrete* means "separate and distinct," as *discrete* stocks of fish.

dominant/predominant (adjectives)

Both are adjectives having similar meanings relating to power, influence, authority, or superiority. *Predominant,* however, is the better choice when referring to greater prevalence in numbers. The adverbs *dominantly* and *predominantly* should be used similarly.

dominate/predominate (verbs)

Both are verbs having similar meanings related to exerting power, influence, authority, or superiority. *Predominate,* however, should be used when referring to greater prevalence in numbers, as should the adverb *predominately.*

due to/because of

Due to is often used where *because of* is required. You should be able to substitute the words *attributable to* for *due to;* if the substitution sounds funny, use *because of.*

each other/one another

Use *each other* to refer to 2 persons or things; *one another* for more than 2.

Examples *The 2 candidates seem to enjoy insulting each other.*
The 3 candidates compete with one another for space on the front page

ensure see *assure*

ex/former

Ex-should be used to refer to the person who immediately preceded the current titleholder *(ex-Governor Murkowski); former* refers to an earlier title-holder *(former Governor Knowles).*

factor of/times

Proportions for increases are frequently expressed incorrectly. In the following information - the starting average = 7 cm and increases by 14 cm to 21 cm - describing the increase can often lead to problems, such as in the following examples:

Examples

Wrong: *The average increased by a factor of 3 (or by 3 times).*
This says the average increased by 3 x 7 (the base) or by 21; that would mean the new average was 7 + 21, or 28. The problem or watch-out word is *by.*

Also Wrong: *A 300% (3-fold) increase in the average was noted.*
The increase was 14 or 200%, not 21 or 300%.

Right but Weak: *The average increased by a factor of 2 (or by 2 times).*
This statement is correct: the average increased by 2×7 or 14. However, it may be misunderstood; that is, many readers might incorrectly assume the new average was 14, not 21.

Better: *The average increased 3 times (or 3–fold or 300%).*
The average increased 3 times the initial average of 7, or the new average was 21. Note, that avoiding use of the word *by* changes the whole mathematical meaning and makes the sentence compatible with conventional interpretation.

Correct: *A 200% increase…*
That is correct, but unless you need to focus on the amount of the increase itself, it may be best to reconstruct the sentence, instead focusing on how the average changed (see above).

fold, times *See factor of*

farther/further

Farther refers to distance only. Use *further* in all other cases.

Examples *...farther upriver we found*
...this finding furthers our hypothesis
...should be further analyzed

fewer/lesser

Use *fewer* when referring to countable items; use *lesser* for amounts that are not countable.

forgo/forego

Forgo (variant spelling *forego)* means to abstain from or give up or abandon.

Examples *We will forgo the test fishery this year.*
The director was willing to forgo travel to save money.

Forego means to precede in time or place.

Example *It was a foregone conclusion that the state would intercede.*

historic/historical

Historic refers to noteworthy events in history. Use *historical* when referring to past events in a cumulative or generic sense.

Examples *...the historic enactment of ANILCA set*
...the historical migration period has been

hybrid crosses

When depicting hybrid crosses, use the following formats: *Chionoecetes bairdi x Chionoecetes opilio;* or *C. bairdi x C. opilio;* or Tanner crab x snow crab. The female partner is always first (left of x).

imply/infer

Imply means "to suggest"; you imply something by your own words or actions.

Example *Victor implied* (suggested) *that data would be available.*

Infer means "to assume, to deduce, to arrive at a conclusion." You *infer* something from another person's words or actions.

Example *I inferred* (assumed) *from Victor's remarks that we would never see that data.*

insure see *assure*

irrespective/regardless

Irrespective and *regardless of* (not irregardless) are synonyms meaning ignoring "equal rights for all, *irrespective of (regardless of)* class or race."

its/it's

Its is the possessive form of *it,* whereas *it's* is the contraction for *it is.*

latter/former

Avoid these words whenever possible. They force the reader to stop and search back over previously read material to locate the intended reference. Often just a few additional words will provide the necessary connection without interrupting the reader

lie/lay

When to use *lie* or *lay* and their forms can be confusing. The following is taken from *Gregg.*

Lay (principal parts: *lay, laid, laid, laying)* means "to put" or "to place." This verb requires an object (noun/pronoun) to complete its meaning.

Examples
Please *lay* the *boxes* on the pallets with extreme care.
I *laid* the *message* right on your desk I *had laid 2* other notes there yesterday.
He is always *laying* the blame on his assistants. (Putting the blame.)
The dress *was laid* in the box. (A passive construction implying that someone *laid* the dress in the box.)

Lie (principal parts: *lie, lay, lain, lying)* means "to recline, rest, or stay" or "to take a position of rest." It refers to a person or thing as either assuming or being in a reclining position. This verb cannot take an object (noun/pronoun).

Examples
Now he *lies* in bed most of the day.
The mountains *lay* before us as we proceeded west.
This letter *has lain* unanswered for 2 weeks.
Today's mail is *lying* on the receptionist's desk

Test: In deciding whether to use *lie* or *lay* in a sentence, substitute the word *place, placed,* or *placing* (as appropriate) for the word in question. If the substitute fits, the corresponding form of *lay is* correct. If it doesn't, use the appropriate form of *lie.*

Examples
I will *(lie or lay?)* down now. (You could not say, "I will *place* down now." Therefore, write "I will *lie* down now.")
I *(laid or lay?)* the pad on his desk (I *placed* the pad on his desk' works. Therefore, write "I *laid* the pad.")
I *(laid or lay?)* awake many nights. ("I *placed* awake" doesn't work Write "I *lay* awake.")
These files have *(laid or lain?)* untouched for some time. ("These files have *placed* untouched" doesn't work Write "These files have *lain* untouched.")
He has been *(laying or lying?)* down on the job. ("He has been *placing* down on the job" doesn't work Write "He has been *lying* down.")

like/likely

Be careful about substituting as for *like.*

Examples
Avoid:
...rockfish, as other reef fishes, are
Instead use:
...rockfish, like other reef fishes, are

Avoid using *likely* as a substitute for *probably; i.e.,* avoid using *likely* as an adverb unless it is immediately preceded by a modifier, such as *very but likely, most likely,* etc.

Examples
Avoid:
...deer, which likely are found near
Instead use:
...rockfish, like other reef fishes, are
...deer, which probably are found near
...deer, which very likely are found near

noncommercial

noncommercial = sport + personal use/subsistence

Pacific herring (or Pacific halibut)

Use *Pacific herring* and the scientific name on first usage in the document; you may use just *herring* thereafter (exception: if your document involves both Atlantic and Pacific herring, the qualifier will probably be needed throughout). Also, the following terms should be used when characterizing herring populations and fisheries:

Examples For herring use:
run biomass – harvest or catch = escapement biomass
Equivalent in salmon:
run – harvest or catch = escapement

Note: The *run* and *run biomass* are composed of mature fish that are participating in spawning, and excludes immatures remaining at sea. Therefore, when referring to an entire herring or salmon population consisting of both the mature and immature fish, use "total population."

parameter

Often incorrectly used. Use only as a mathematical variable or constant. Avoid using as a synonym for a "characteristic element" (e.g., *the biological parameters studied included)* or "a fixed limit or boundary" (e.g., *were within the parameters of the investigation).*

passive voice

The passive structure allows the writer to alter noun choices for a sentence.

Examples Passive:
Single beam acoustic sampling was conducted on both banks…
Salmon escapement was estimated using…
Active:
We conducted sampling on both banks using single beam acoustic…
We estimated salmon escapement using…

The nouns in the passive construction for the above sentences are *sampling* and *escapement*, and in the active structures the noun is *we*. Choice of active vs. passive voice is a style choice, and for scientific literature both constructions are seen as appropriate. In the sentences above, *we estimated* gives more emphasis to the estimation process, and *escapement was estimated* gives more emphasis to escapement. Avoid use of the passive constructions when it adds ambiguity or wordiness to sentence construction, or when the doer of the action is important. The majority of scientific literature published in journals now includes a mix of active and passive tenses, and our reports will make editorial corrections based only on grammatical correctness.

Note: This recommendation is a revision to the Departmental Writer's Guide (Hicks et al. 1999). The Writer's Guide had to provide recommendations for all Departmental writing, and for information and educational literature the guidelines would be different than those provided for scientific writing.

percent/percentage/percentage points

Use *percent* for general audiences and in department correspondence; use the percent sign (%) for scientific audiences when associated with a number and *percentage* when not used with a number. Also, the difference between *7%* and 15% is not 8% but *8 percentage points.*

plant/stock/transplant

A lake or stream is *stocked* with fish, but fish are *planted* into a lake or stream. Use *transplant* rather than *plant* when you want to reinforce that fish being planted originated from a source other than the source being stocked. Note: Do not use transplant for animals and birds; in-stead use *introduce or reintroduce.*

prevalence/incidence

Prevalence is a rate over time of some disease (several data points); *incidence is* a particular percentage infected at a point in time (1 data point).

principle/principal

Principle is a noun meaning a rule, a fundamental doctrine, or a level of ethics. *Principal is* an adjective or a noun (sum of money, head of a school) and generally is the correct word to use when *principle is* not what is meant.

Example *The principal finding was that...*
The precautionary principle

quasi

Quasi is a prefix that indicates "to a degree" or "to some extent." It can also stand for "half" as in a semicircle or semimonthly. One should avoid using this term. Instead, refer to *bi/semi.*

raise/rise

Raise means it is moved upward by someone or something - that is, not of its own volition. *Rise* means to move upward by itself or upon its own volition.

random

Care must be taken when using this word. It is commonly, almost gratuitously, added to describe the word *sample,* even though the sample may not have been actually random. Use *random sample* only in its strict statistical sense; i.e., every possible individual sample has an equal probability of being selected.

regard/regards

When used to mean *consider, as* should be used; e.g., "He *considers* it dishonest," but "He *regards* it *as* dishonest." Never follow with an infinitive, such as "He *regards* it to be dishonest." The terms *with regard to* and *in regard to* mean *with reference to. Do* not use *regarding* and *in regard to* for introducing a subject. As a noun, use the plural *regards* only in the formal expression, such as "Give my *regards* to the commissioner."

regardless

Do not use *irregardless,* which is nonstandard and a double negative.

relation/relationship

Use *relationship* when referring to familial ties of people; use *relation* to describe connections between inanimate objects or concepts.

respectively

This word is often overused in scientific writing. It makes reading difficult because it forces the reader to cross-reference parts of the sentence. Its use should be minimized.

Examples Avoid: *...samples A and B were 45 mm and 65 mm, respectively*
Use: *...sample A was 45 mm and B was 65 mm.*

run/return

Run refers to an aggregation of salmon of all ages returning from ocean feeding grounds to spawn in any given year. *Return* refers to an aggregation of salmon over several or more years that represent the surviving adult offspring from a single brood year. For pink salmon, run equals return.

salmon ages

For any given salmon brood, their birth date is conceptually standardized at January 1 of the year following the brood year, regardless of when a given brood actually hatched. For example, a brood spawned in 1995 conceptually hatched January 1, 1996, and the aging clock begins to run on that date. Therefore, a salmon juvenile spawned in 1995 will be age 0 throughout 1996 and age 1 throughout 1997, etc. In a document that refers to salmon ages, at least some of which include saltwater life stages, use the European aging system: x. for the freshwater age only, *.x* for the saltwater age only, and *x.x* for both saltwater and freshwater ages. In a document that only mentions freshwater ages, drop the European system's period (i.e., avoid x.) and use the age without the period (i.e., age *x);* note, however, that *x* is the same number regardless of whether the European or non-European system is used.

salmonid life stages

Terms denoting salmon life stages are often misused, in part because many writers are unaware of correct usage, as defined in the following chronology of stages:

ovum–denotes an unfertilized female reproductive cell(s) (synonym: *gamete* or sometimes *egg*).

egg/embryo–denotes a fertilized egg up to hatching (synonym: *fertilized egg*).

sac fry–hatched fry with a yolk sac; this stage remains relatively acquiescent in the incubation gravel.

alevin/emergent fry–fry that have utilized their yolk sac, *alevins* referring to those still within the gravel, and

emergent fry to those recently emerged or emerging from the gravel.

fry–larval stage following emergence that lasts until pigmentation and parr marks are visible.

parr–applies to only freshwater-rearing species (sockeye, coho, Chinook) and denotes the stage between the development of pigment/parr marks and the smolt stage; note that pink and chum salmon skip this and the smolt stage and go from the fry stage directly to the juvenile stage.

smolt–for freshwater-rearing species (sockeye, coho, Chinook) it is the time that parr are able to osmoregulate and migrate to saltwater.

juvenile–the early marine stage of all species that begins with their entry into salt water and continues through the end of that calendar year.

immature–this stage lasts from the first day of January following saltwater entry until gonadal development becomes noticeable; pink and coho salmon skip this stage and enter the maturing stage immediately following the juvenile stage because their gonads begin to develop around the first January following saltwater entry.

maturing–the ocean-rearing stage that begins when gonadal development becomes noticeable and lasts until the adult stage. Chum, sockeye, and Chinook salmon enter this stage from the immature stage. However, pink and coho salmon enter this stage from the juvenile stage - i.e., on the first day of January following saltwater entry–because their gonads begin to develop at that time.

adult - generally covers the period from the beginning of the spawning migration or run until death; note that *spawner* should be used only for those adults constituting the escapment.

Terms that aggregate 2 or more successive stages can be developed as needed but should be defined on first usage (e.g., *subadult* to refer to immature and maturing salmon); however, the *freshwater-rearing* and *ocean-rearing stages* are common enough and sufficiently intuitive to enable usage without introduction. For more information on definitions of the ocean-rearing stages see INPFC Bulletins 31 (coho), 34 (sockeye), 35 (chum), 38 (Chinook), and 40 (pink salmon).

significance, statistical and biological (or real)

Statistical significance is a precise use of the term significant; the term in this sense is used to define the statistical sense of reaching a predefined numeric threshold, which is then used to reach a specific statistical conclusion. However, biological significance is not identical to statistical significance; a sample size large enough to generate a *p* value of 1 cm for a fish length may be statistically significant, but be of little importance (biological significance) for fishery management.

since see *because/as/since*

spawn on kelp

Use *spawn on kelp* rather than *roe* or *eggs on kelp.* Hyphenate when used as an adjective. Other variations include *pound spawn on kelp* or *pound spawn-on-kelp fishery* or *wild spawn-on-kelp fishery; suspended spawn on kelp* or *suspended spawn-on-kelp fishery.* When referring to the herring *spawn-on-kelp* fisheries, use the following qualifiers to describe harvests: "equivalent herring harvest" or "harvest in product weight."

special harvest area/terminal harvest area

The *special harvest area* (SHA) is an area where private hatchery returns segregate from wild stocks and the private hatchery takes returns for cost recovery. The *terminal harvest area* (THA) is the area adjacent to a state or private hatchery where commercial fishermen may harvest segregated hatchery returns. The THA may be separate and adjacent to the SHA or be the same area as the SHA but open at different times; or the THA may include but extend beyond the SHA. Use THA when referring to common property harvests taken in the THA; use SHA when referring to private hatchery cost recovery.

subject verb agreement

Is it "*a total of 270,000 salmon was harvested or were harvested"?*

Singular and plural subjects require singular and plural agreement with the verb, but agreement can be tricky when the subject is more than one word; often these "extended" subjects are attached to "of" phrases (2 tons *of biomass).* Verb agreement with stretched out subjects becomes even trickier because the connected *of phrases* carry different types of nouns. There are two types:

- *noncount* nouns are words that generally are not counted, like the words *salt, butter, soil, biomass,* and are usually singular.
- *count* nouns are countable, like *book, words,* and *computer* and are either singular *or* plural.

We offer 4 rules to eliminate some of the hardships of subject verb agreement:

1. Units of measurement take singular verbs because they are thought of as distinct, single units. Example: *Four feet of line was tangled.*

2. The phrases *a number and a* total are usually plural; however, *the number* and *the total* are usually singular.

    1. *A total of 270,000 salmon were harvested.*
    2. *A number of salmon harvested and discarded were not included.*
    3. *The total number of salmon harvested was 270,000.*

3. Noncount nouns are generally singular (*MS222 was added*; *the biomass was stored*).
4. When necessary recast passive sentences to active to make agreement even easier.

    1. Passive sentence: Two feet of soil was *taken* from the site.
    2. Active sentence: DEC *took* 2 ft of soil from the site.

test fishery

This term is Alaska jargon that originated from experimental fisheries resembling small-scale commercial fisheries the department conducts to assess early run strength prior to commercial openings. The term, as jargon, should always be parenthetically defined. However, do not use the term to describe any sort of fish population sampling conducted by department staff. That is, *fish population samples* should be called that, or something similar, not *test fisheries* or *test catches.*

that/which

That is used when introducing an essential clause (i.e., a clause needed to correctly understand the full and correct meaning of the sentence). Such clauses are not set off from the rest of the sentence by commas. *Which* is used to introduce a nonessential clause (i.e., a clause that includes extra information that is useful but not necessary for correct interpretation of the sentence); these nonessential clauses are set off by commas. Note that careless use of *that/which* can cause misreading of the sentence. For example, in the following carelessly constructed sentence, readers can extract 2 different meanings:

The samples which were collected on Friday all tested positive.

The considerate author will avoid ambiguity and help readers select the intended interpretation:

The samples that were collected on Friday all tested positive. (Essential clause: tells the reader that the Friday samples were all positive, presumably to distinguish those from other sample results.)

The samples, which were collected on Friday, all tested positive. (Non-essential clause: the clause provides information, but it could be left out without altering the main point of the sentence.)

Rarely does the word *that* introduce a nonessential clause:

Exception: *Their conclusion, that A= F, was later refuted.*

Also, remember to avoid *that/the* pile-ups, like "the data indicates (not *that the)* herd population is declining...."

toward/towards

Toward and *towards* are different forms of the same word. *Toward is* the preferred form in American English. In British English, *towards* is more common than *toward*

while

Do not use *while* as a conjunction; use in a temporal sense only (e.g., *"While* sampling, we discovered . . ."). Otherwise, in place of *while* use *although, but, whereas,* or *and.*

Examples	Avoid:	*...were studied, while the western stock was not.*
	Use:	*...were studied, although (but) the western stock was not.*

who

The word *who* carries either essential (identifying information that is needed to understand the correct meaning of the sentence; e.g., *'The manager who works in the Anchorage office received the award.')* or nonessential (extra information that is useful but not necessary for correct interpretation of the sentence; e.g., *"The manager, who is in Hawaii this week, received the award.").*

Essential information does not require a comma; nonessential information requires a comma or a pair of commas midsentence. The comma visually separates nonessential messages so the reader can easily discern the sentence's main point.

Examples
The publisher will consider proposals from biologists who submit their plans before June 30 (essential, no comma).
Select people who want to be on this committee (essential, no comma).
The biologist in the blue shirt, who graduated from Montana State University, is the new regional supervisor (nonessential information is set off by a pair of commas).

When *who* follows a proper noun, the who-unit is usually nonessential and requires commas.

Example *Kate Persons, who works in out Nome office is a member of the survey team.*

who/whom

The traditional rules that determine the use of *who* and *whom* are simple but require remembering grammar. To make your job simpler, when you are puzzling over whether you should write *who* or *whom,* apply this easy test: use *who* when the words *I, he,* or *she* are appropriate substitutes and use *whom* when *I, he,* or *she* are not appropriate substitutes.

with

Do not use with as a conjunction. Use and, but or a semicolon (;)

Examples Avoid:

Temperatures were taken daily with water samples taken every…

Use:

Temperatures were taken daily, and water samples were taken…

Or:

Temperatures were taken daily; water samples were taken…

Newly developed vocabulary

If a word has a clear definition in the dictionary and common usage, do not adapt a specialized usage as part of a report's vocabulary. The specialized language may be common in specific environments, but until generally accepted we should not adapt those terms. Acceptance in the major dictionaries, with the usage listed as a primary meaning for the word, is the standard to apply before adapting a new term.

Examples Avoid:

We attributed the stream…
We captured angler residency…

Instead use:

We recorded stream attributes including…
We documented angler residency status…

SECTION E: ACRONYMS AND ABBREVIATIONS

A list of acronyms for governmental, corporate, and business organization names commonly used in fishery management and research follows. Always introduce them upon first use. While these acronyms are offered to provide consistency in our usage, it is acceptable, and often preferred that these titles be spelled out within a report, particularly when the anticipated audience may not be familiar with the entities. Overuse of acronyms is highly discouraged (unless a term is used more than 5 times within a report, it is better to spell it out). The only exception to this rule can be when in a particular environment, an agency or organization is more commonly referred to by its acronym than its full title, as is often the case with hatchery operators. In those cases, an alphabetic acronym list should be provided, so that readers have a common place to find the full titles.

	Acronym
Alaska Board of Fisheries	BOF
Alaska Board of Game	BOG
Alaska Department of Commerce and Economic Development	DCED
Alaska Department of Environmental Conservation	DEC
Alaska Department of Fish and Game	ADF&G
Alaska Department of Fish and Game Division of Commercial Fisheries	CFD
Alaska Department of Fish and Game Division of Sport Fish	SFD
Alaska Department of Fish and Game SFD Research and Technical Services	RTS
Alaska Department of Fish and Game Division of Subsistence	Subsistence
Alaska Department of Fish and Game Division of Wildlife Conservation	WC
Alaska Department of Natural Resources	DNR
Alaska Department of Transportation	DOT
Alaska National Interest Lands Conservation Act	ANILCA
American Fisheries Society	AFS
Bureau of Land Management	BLM
Commercial Fisheries Entry Commission	CFEC
Exxon Valdez Oil Spill	EVOS
Fish and Wildlife Protection	FWP
International Association of Fish and Wildlife Agencies	IAFWA
International Pacific Halibut Commission	IPHC
National Marine Fisheries Service	NMFS
National Oceanic and Atmospheric Administration	NOAA
National Park Service	NPS
North Pacific Anadromous Fish Commission	NPAFC
North Pacific Fishery Management Council	NPFMC
Pacific Salmon Commission	PSC
Pacific Salmon Treaty	PST
Southeast Sustainable Salmon Fund	SSSF
State of Alaska Division of Administration	DOA
U. S. Fish and Wildlife Service	USFWS
U. S. Fish and Wildlife Service Office of Subsistence Management	OSM
U. S. Geological Survey	USGS

ABBREVIATIONS

Miscellaneous Abbreviations and Acronyms

A list of standard abbreviations used in joint fisheries technical documents is provided facing the title page of our technical report series. All the miscellaneous abbreviations and acronyms listed below should be spelled out in full on first use, with the abbreviation or acronym beside it in parenthesis. In many cases, it may be better to avoid using the abbreviation, especially if the word is infrequently used in the document.

age-weight-length (adjective)	AWL
Arctic-Yukon-Kuskokwim	AYK
carapace width/length	CW/CL
catch per unit effort	CPUE
coded wire tag	CWT
Exclusive Economic Zone	EEZ
Exxon Valdez Oil Spill	EVOS
Fishery Management Plan	FMP
fish resource permit	FMP
fish transport permit	FRP
fork length	FL
geographic information system	GIS
global positioning system	GPS
guideline harvest level	GHL
harvest per unit effort	HPUE
individual fishery quota	IFQ
individual transfer quota	ITQ
knot	kn
memorandum of agreement	MOA
memorandum of understanding	MOU
metric ton	mt
not applicable	NA
no data	ND
Pacific Salmon Treaty	PST
special harvest area	SHA
terminal harvest area	THA
total length	TL

Although standard abbreviations are supplied, it is necessary that these terms be spelled out on first use within the text of a document. In a table, the abbreviation can stand alone.

For the following terms, do not abbreviate, spell out:

acre
fathom
ton

SECTION F: PLURALS

Singular	Plural	Mix of Species
alevin	alevins	alevins
alga	algae[a]	algae[a]
bear	bears	bears
beaver	beavers	not applicable
bison	bison[a]	not applicable
buck	bucks[a]	bucks[a]
caribou	caribou[a]	not applicable
char	char[a]	chars[a]
clam	clams	clams
cod	cod[a]	cods[a]
coyote	coyotes	not applicable
crab	crabs	crabs
deer	deer[a]	deer[a]
doe	does[a]	does[a]
duck	ducks	ducks
elk	elk[a]	not applicable
fingerling	fingerlings	fingerlings
fish	fish	fishes
flounder	flounders[a]	flounders[a]
fox	foxes	foxes
fry	fry	fry
fungus	fungi/funguses	fungi/funguses
furbearer	furbearers	furbearers
geoduck	geoducks	geoducks
goat	goats	goats
goose	geese	geese
grouse	grouse[a]	grouses[a]
halibut	halibut[a]	halibuts[a]
hare	hares	hares
herring	herring[a]	herrings[a]
larva	larvae[a]	larvae
lynx	lynx[a]	lynxes[a]
marten	martens	not applicable
megalopa[b]	megalopae	megalopas
megalops[b]	megalops	megalops
mink	mink[a]	not applicable
mollusk	mollusks	mollusks
moose	moose	not applicable
muskox	muskoxen	not applicable
muskrat	muskrats	not applicable
octopus	octopuses/octopi	octopuses/octopi
otter	otters	otters
parr	parr[a]	parr[a]
pike	pike[a]	escopids[c]
plankter[d]	plankton/plankters[d]	plankton[d]
rockfish	rockfish[a]	rockfishes[a]

-continued-

Plurals–Page 2 of 2.

Singular	Plural	Mix of Species
salmon	salmon[a]	salmon[a]
sheep	sheep	sheep
shrimp	shrimp[a]	shrimps[a]
smolt	smolts[a]	smolts
squid	squid[a]	squids[a]
trout	trouts[a]	trouts[a]
walrus	walruses	not applicable
waterfowl	waterfowl	waterfowl
weasel	weasels	weasels
wolf	wolves	not applicable
wolverine	wolverines	not applicable
zoea[a]	zoeas[a]	zoeas[a]

[a] The dictionary recognizes 2 acceptable plurals, but the committee chose this standard for ADF&G writing.

[b] Use either megalopa or megalops and their plurals, but do not mix the 2 forms within a document.

[c] Use *plankter* for a single planktonic organism. Use *plankters* when referring to a specific number of such organisms; however *plankton* may also be used.

[d] Although technically pickerels and muskellunge are pikes, when referring to a mix of pike species "pikes" may be misunderstood to be several or more pike *E. lucius*. Therefore, when referring to a mix of pike species, use "*esocids.*"

General Terms:

Singular	Plural
addendum	addenda
agenda	agendas
analysis	analyses
criterion	criteria/criterions[a]
data point/not data[b]	data
fishery[c]	fisheries[c]
formula	formulas
genus	genera
hypothesis	hypotheses
index	indices/indexes[a]
memorandum	memoranda/memorandums
ovum	ova
phenomenon	phenomena
species	species
stratum	strata/stratums[d]
symposium	symposiums/symposia
taxon	taxa
virion	virions[e]
virus[e]	viruses[e]

[a] Although allowed in popular writing, this should not be used in technical writing.

[b] Although *data* as a singular is allowed in popular writing, this use was not chosen by the committee. (Note: *datum* is no longer used.)

[c] Consistently use fishery or fisheries as the plural modifier of biologist or management in a report, not both. For ADF&G biologists, use fishery biologist because this is the term for the job class.

[d] Although the dictionary allows either, the committee did not endorse the use of this plural.

[e] Use *viron(s)* or *virus particle(s)* when referring to a single or multiple particles, especially numbers of (e.g., *a single virion can infect*…). Use *virus/viruses* for all other uses; i.e., when not referring to numbers of particles.

SECTION G: BASIC GUIDELINES FOR FORMAT AND PRESENTATION OF NUMBERS

REVISED NUMBER STYLE

The number styles in the ADF&G Writer's Guide (Hicks et al. 1999) are guidelines for all documents presented to the public. This document recognizes that number styles will vary with document type; scientific and technical documents have specific requirements for presentation of numbers, and those styles are presented below. While this section continues to rely closely on the departmental Writer's Guide, this guide follows the modification of the number style, and has as its main guidance CSE (2006).

Numerals or Words–Modern Scientific Number Style

The conventions presented revise what has often been called the "scientific number style." That style generally used words for 1-digit numbers and numerals and not for larger numbers, a distinction that many found arbitrary. The revised or modern scientific number style treats numbers more consistently by extending the use of numerals to most single-digit whole numbers that were previously expressed as words. This style allows all quantities to be expressed in a similar manner, and, because numerals have greater visual distinctiveness than words, it increases the profile of quantities in running text (CSE 2006).

Cardinal Numbers

Quantitative elements in scientific writing are of paramount importance; use numerals rather than words to express whole and decimal numbers in scientific text, titles, headings, tables and figure captions. This practice increases their visibility and distinctiveness, and emphasizes their enumerative function.

Also use numerals to designate mathematical relationships, such as rations and multiplication factors:

Examples	*3 hypotheses*	*7 samples*	*52 trees*
	328 amino acids	*4 times*	*0.5 mm*

Numerals are used to designate mathematical relationships, such as ratios and multiplication factors:

Examples	*5:1*	*4-fold*	*1000x magnification*

There are 4 categories of exceptions when numbers should be spelled out:

1. Spell out all numbers used to start a sentence. If it can be done, reword the sentence with the number appearing within the text.

   Twenty milligrams is the desired amount, but 15 mg is enough; can be reworded as:

   The desired amount is 20 mg, but 15 mg is enough.

2. When 2 numbers are adjacent, spell out the number that is most easily expressed in words, and leave the other as a numeral. In general, retain as a numeral any number that occurs with a unit of measurement. If possible, reword the sentence to separate the numbers.

   The sample was divided into eight 50-g aliquots; can be reworded as:

   The sample was divided into 8 aliquots of 50 g each.

3. For most general, not enumerative, uses, spell out zero and one. These numbers have a variety of functions which make their quantitative meaning irrelevant, and in running text the characters can be confused with letters. When possible, reword these constructions to remove appearance of inconsistency (CSE 2006).

   One as a personal or indefinite pronoun:

   one must not neglect to *this one is the preferred option;*

   One or zero as a figures of speech:

   on the one hand *zero-tolerance policy*

   However express the whole numbers zero and one as numerals when they are connected to a unit of measure, or when they are used as assigned or calculated values.

   1 year *0 ℃* *1 mm*

   with q fixed at 1 *when z = 0* *a mean of 0*

   Express *one* and *zero* as numerals when they are part of a series, or closely or intermittently linked with numbers:

   0, 1, 5, and 9 were… (series)
   1 of 4 subspecies (closely linked)
   2 applications instead of 1 were (closely linked)
   between 0 and 2 (closely linked)
   3 samples contained…, 1 sample was… (intermittently linked)

4. There are instances when numbers are used as descriptive units, and secondarily as quantities. An example would be "We excluded those three marked classes" (where three indicates which marked classes were excluded). The words "the" or "those" immediately preceding a number generally indicates ambiguous situations such as these.

Ordinal Numbers

Ordinal numbers generally convey rank order, not quantity. Rather than being expressly enumerative, ordinals often describe "which," "what," or "in what sequence." Because this function of ordinals is more prose oriented than quantitative, distinctiveness within the text is less important for ordinal numbers, and undisrupted reading flow and comprehension take precedence. Potential confusion between the numeral "1" and the letters "l" and "I" is also a consideration.

1. Spell out single-digit ordinals used as adjectives or adverbs (*the ninth time*).
2. The numeric form of 2-digit ordinals (corresponding to the numbers 10 and higher) is less likely to impede comprehension, and the practice of using the numeric form for such ordinals is well established. Therefore, express these larger ordinals as numerals (*for the 10th time*).
3. Express single-digit ordinals in numeric form if they appear in a series or are intermittently linked with larger ordinals (*the 5th, 8th, and 10th samples*).
4. To provide visual cues to comprehension, express single-digit ordinals in the numeric form if they are used repeatedly.

   Of those 6, we first examined the 4th subject. Next, we looked at the 5th subject, and then returned to review the 1st, 2nd and 3rd subjects.

Fractions and Percentages

In general, spell out fractions in running text. Hyphenate all 2-word fractions, whether used as adjectives or nouns.

One-half of the subjects *a third of the study plots*

For fractional quantities greater than 1, use missed fractions if the precise value is not intended. Set a built-up fraction (e.g., ½) close to the whole number, but insert a space if the fraction is not built up.

was followed for 3¼ years *about 1 1/4 km distant*

When the precise value of a number is being conveyed, the decimal or percent form is preferred.

27.2% of the *a study area measuring 1.3 x 3.0 km.*

But note, in some cases a fraction is always more precise than a decimal value *(1/3 rather than .333);* (CSE 2006).

Zeros before decimals and decimals after integers

For numbers less than 1.0 always use an initial zero before the decimal point, in text, tables, and in figures. Never terminate an integer by a decimal point (CSE 2006).

0.497 not .497

P = 0.05 not P = .05

74 not 74.

Numbers combined with units of measure or symbols

Symbols may have an alphabetic basis (e.g., mm. kV, g, qt, ft) or a nonalphabetic basis (e.g., %, $, ≈,). Generally neither type of symbol should be used without an accompanying numeral. Rules differ for separating numerals from alphabetic and nonalphabetic symbols.

Use a single space to separate a number and a subsequent alphabetic symbol.

The overall length of 130 mm

Generally, close up a number and a nonalphabetic symbol, whether the symbol precedes or follows the number, except when the symbol is being used as a mathematical operator.

±3 mm *44%* *12°C*

The abbreviations for units of measure are identical in the singular and in the plural.

Dates

Spell out the names of days of the week and months in text. The names of days and months can be abbreviated to their first 3 letters if they appear in tables, graphs, and references.

Do not use an apostrophe with years; for example, use the 1970s, not the 1970's.

When writing dates, use no punctuation in the following examples (day month year, month year, or month day):

on 10 November 1983 we in November 1983 we on November 10 we

However, for month day year:

on November 10, 1983, we…(CMS 2003).

Time of Day

Use the 12-hour system or the 24-hour clock, but not both systems in the same document.

For the 12-hour system, minutes are separated from hours by a colon, and a leading zero is added if necessary so that the minutes are presented as a 2-digit number. The abbreviations AM or PM are typed as capital letters, and separated from the time with a space and no intervening punctuation:

12:01 in the morning = 1 minute after midnight *or* 12:01 AM

12:01 in the afternoon = 1 minute after noon *or* 12:01 PM

For the 24-hour system 4 digits are always used to express the time, and contain no punctuation. Defining the number as hours is only necessary if the context does not make the time designation clear, and in those cases spell out hours e.g. 0056 hours not 0056 h. (CSE 2006).

Numbers in a range

When expressing a range of numbers in text, use the word "to" or "through" to connect the numbers. Alternatively, an en-dash (which means to) may be used only between 2 numbers that are not interrupted by words, mathematic operators, or symbols, but never use an en dash when the word from or between introduces a range (CSE 2006).

When the range includes numbers of several digits, do not omit leading digits from the second number in the range:

1938 to 1954; not *1938-54*

1466–1472 km not *1466-72 km*

A range of numbers and the accompanying unit can be expressed with a single unit symbol after the second number of the range if there is a space between the number and the symbol. When the symbol must be closed up to the number (e.g. the percent) the abbreviation or symbol is repeated after both numbers (CSE 2006).

23 to 47 kV

50 to 250 W/m^2

10% to 15%

however, when used with the en dash range indicator,

10–15%.

For a series of numbers, present the unit after the last numeral only, except if the unit symbol must be set close to the number:

12, 17, 43, and 76 cm

categories of <3, 3–7, and >7 g

but

38%, 55%, and 29%

If a range begins a sentence, work to recast the sentence. The alternative is to spell out the first number, and write the second as a numeral with the accompanying unit. These constructions are awkward and appear inconsistent, and should be avoided:

Avoid:

Twenty-three to 25 km

Instead use:

The test range was 23–25 km

Do not use the word "by" before a range, as the word creates the expectation of an additive value. For the same reason, be careful when expressing 2 numbers preceded by word such as "increase", "decrease", or "change". In those cases a range may be intended, but the reader may misinterpret the first value as the initial value and the second as the new value (CSE 2006):

increased from 15 cm to 25 cm….could mean an increase of 10 cm, or it could mean an increase in the range of 15 to 25 cm.

Fully state both numbers in a range, so they can each stand alone:

56,000 to 74,000 not *56 to 74,000.*

Mathematical Operators and Standards

Use the following symbols for common mathematical operators:

Symbol	Meaning	Remarks	
+	plus		
−	minus		
×	times	also shown by juxtaposition of the quantities	$15n$; 15×25
/; ÷	divided by	avoid xy^{-1}; our readership is not entirely technical, and this usage is not part of common language	x/y or $\frac{5}{9}$
∑	sum		
±	plus or minus		

When used with numbers or variable symbols, set off common mathematical operators (plus, minus, times, and division) and all the equality and inequality symbols from variables and numerals with a space. However, when the symbols for minus or plus indicate a positive or negative value, do not insert a space before the number. Do not use these symbols between 2 words in running text. When these symbols are modifying a number rather than serving as operators, close them up to the numeral or write them out. Two or more mathematical operators should not appear side by side (CSE 2006). See the examples below:

biomass ≤500 g	*the +2.5 difference*
x > y at a = 0.05	but *50× magnification*
the target zone equals the optimum plus the	not *the target zone = the optimum + the…*

Spacing of mathematical symbols

Do not use spaces between quantities multiplied together:

$2xy$

Do not use spaces between fence brackets and the variables on either side of them:

$(a-1)y$ $(4p + 4bc)(1 - a)$ $a[x]$

Other number standards

A mixture of numerals and spelled-out numbers can be used to express very large numbers (millions or more).

In text, tables, and figures use commas to subdivide whole numbers greater than 3 digits.

Try to avoid using text strings of individual numbers that are separated by commas or semicolons; these constructions can cause confusion.

The correct number of significant digits should be used in reported numbers. In general, the number of digits in a reported measurement implies that the true value lies within a range, the width of which is determined by the last decimal place in the measurement. Thus a value of 5 cm implies a range of accuracy of 1 cm whereas a value of 5.3 cm implies a range of 0.1 cm. The significant digits in a computed value should not exceed that of the value in the computation with the least number of significant digits. Thus if fish lengths were measured to the nearest centimeter, average length should also be rounded to a whole centimeter.

Statistical Findings

Include reference to the statistical method used for all relationships explained and validated in the results section through a statistical process. When reporting the results of statistical tests state the test statistic, associated probability (preferably as an equality) and, where appropriate, the degrees of freedom.

Authors should also consider and discuss biological significance of the results. It is useful for the author to note when statistically significant results have limited biological relevance (for example, a statistical significance value of 1 cm in fish length may not have biological significance).

Using Mathematical Terms Developed by Others

Special terms or names for special mathematical expressions as used or coined by an author should be cited, and the terminology used should be the same as the term originally used by the author, unless variations are clearly defined and explained. For example: “We estimated potential fish production using Ryder's (1965) morphoedaphic index of yield.”

Equation Presentation

All variable names must always be in italics.

All units of measurement must be regular text.

The names of all standard statistical tests are variable names, as are significance probabilities, and regression coefficients.

Acronyms used as variable names are italicized.

Break complex concepts and series of less complex concepts; introduce one new concept at a time and fully explain before moving to next.

Consistently call mathematical ideas by one name, and don’t use that name for something entirely different.

Example Equation Narrative:

(Source: Harold J. Geiger, ADF&G Fishery Scientist [retired]; 2008 unpublished memorandum)

Let x_i denote the number of strays detected from a particular release group, denoted release group i. Let x_i represent the number of long-distance strays, and let y_i denote the original release size of the cohort of tagged fish of this particular release group, making no attempt to expand or otherwise account for untagged fish. We let the value of this covariate serve as a surrogate for the number of adult salmon returning from release group i. Each release group also was associated with another covariate, which we denote as z_i, which provides the shortest over-water distance from the hatchery to the release site. In cases where the fish were directly released at the hatchery, that is non-remote releases, the value of this covariate is zero.

We assumed that the number of long-distance strays detected from release group i followed a Poisson distribution, with an underlying intensity (or rate of stray detection) as function of both observed factors of interest and quantitative measures of interest. If λ_i denotes the Poisson mean of the number of freshwater recovered tags from long-distance stray fish for release group i, we assumed that the natural logarithm of this parameter can be expressed as a liner statistical model. Because we assumed that x_i follows a Poisson distribution, then we can write the probability or recovering exactly x_i tagged fish in freshwater from release group i as,

$$f(x_i \mid \lambda_i) = \frac{\lambda_i^{x_i} \exp(\lambda_i)}{x_i!}, \text{ for } x_i \text{ equal to 0, 1, 2, 3,… and so on.} \quad (1)$$

Further, we can write,

$$E(x_i) = \lambda_i \text{ and, } \ln(\lambda_i) = \mu + \alpha + \beta + \xi y_i + \delta z_i \ldots, \quad (2)$$

for y and z denoting covariates of interest and α and β representing the release-specific effects, such as hatchery or release site.

SECTION H: SPECIES NAMES AND RELATED RULES

Species Names and Related Rules

Correct common and scientific names for most vertebrate and invertebrate species we write about are listed in this section. However, you should always consult the appropriate source when writing a species name because occasionally the names are changed and this manual will not always reflect the latest changes. Correct spelling and capitalization of scientific and common names of animals follow strict rules established by the International Commission of Zoological Nomenclature. Some of the basic rules are summarized below.

Scientific Names

1) Scientific names of species are binomial or consist of 2 words: the first is the genus and the second is the specific or species name. The first letter of the genus is capitalized and the specific name or epithet is never capitalized; both are italicized (e.g., *Oncorhynchus keta*). When the genus has already been introduced in a document, it may be abbreviated when identifying a species (e.g. *O. gorbuscha*).

2) Subspecific names, when used, are also italicized and placed after the specific epithet (e.g., *Micropterus salmoides floridanus*).

3) The name of the individual who first described the species and the year it was described appear after the scientific name and should not be italicized (see following list for examples); however, the describer's name and year are often not included when writing a scientific name. If the name and year are enclosed in parentheses, the genus has been changed from the genus designated by the original describer.

4) To designate the scientific name of an unidentified species that has been identified only to the genus level, use the unitalicized abbreviation "sp." (e.g., *Chlamys* sp.). In place of the specific or species name, use "spp." for several or more unidentified species names (e.g., *Serranus* spp.). Do not use "sp." to refer to an unspecified, general member of a genus. Although "spp." is often used to refer to an aggregation of several to all members of the genus, that practice is unnecessary; instead simply use the italicized genus name alone without any species name. Do not combine either abbreviation with an abbreviated genus (e.g., do not use *O*. spp. for unidentified salmon species; use *Oncorhynchus* spp.).

Common Names

1) Common names are not italicized or capitalized, except for those portions using a proper name (e.g., "Canada goose" or "Pacific cod"). When writing a common name, the second part of the name should not be dropped (e.g., "pinks" for "pink salmon"); however, a generic term, such as "fish," can often be used in place of the full common name when there is no ambiguity about the species being referenced.

2) Common names are used in most general and scientific writings, except in instances where a species lacks a common name (fairly common for lower-form invertebrates).

However, in formal documents, introduce the scientific name after the first mention of the common name, and subsequently you may use the common name alone. However, if the document has an abstract or executive summary, the scientific names should be introduced there as well as when first encountered in the main text.

Family and Order Names

The genus, subgenus, species, and subspecies are the only part of the taxonomic hierarchy that is italicized; all other taxonomic categories are not italicized. The first letter of the genus and subgenus is capitalized. Families (a species aggregate sharing common characters) always end in "idae" (family: Salmonidae). First letters of these names are capitalized; however, they are not capitalized if they are shortened to an informal name (e.g., salmonids for Salmonidae).

Common Fish and Shellfish of Alaska

Listing of all Alaskan species was not possible here; however, full listings are available in the standard references.

Shellfishes

Common Name	Scientific Name	Notes
Bivalves		
abalone, pinto	*Haliotis kamtschatkana* (Jonas, 1845)	
clam, Washington butter	*Saxidomus gigantean* (Deshayes, 1839)	
cockle		
Greenland smoothcockle	*Serripes groenlandicus* (Mohr, 1786)	
Nuttall cockle	*Clinocaridium nuttallii* (Conrad 1837)	
flat surfclam	*Simomactra planulata* (Conrad 1837)	not "horse clam" or "fatgaper"
geoduck, Pacific	*Panopea abrupta* (Conrad, 1849)	
horsemussel, northern	*Modiolus modiolus* (Linnaeus, 1758)	
littleneck		
Japanese littleneck	*Venerupis philippinarum* (A. Adams & Reeve, 1850)	not *littleneck clam* or *Manila clam*
Pacific littleneck	*Protothaca staminea* (Conrad, 1837)	
macoma		
Baltic macoma	*Macoma balthica* (Linnaeus, 1758)	
pointed macoma	Macoma inquinata (Deshayes, 1855)	
mussel		
mussel	mussel (foolish*) is Mytilus trossulus* Gould, 1850	not *Mytilus edulis* (Atlantic only) or "blue mussel"
California mussel	*Mytilus californianus* Conrad, 1837	
oyster, Pacific	*Crassostrea gigas* (Thunberg, 1793)	
razor		
Alaska razor	*Siliqua alta* (Broderip and G. B. Sowerby I, 1829)	also known as northern or arctic razor
Pacific razor	*Siliqua patula* (Dixon, 1789)	
scallop		
giant rock-scallop	*Crassadoma gigantea* (J. E. Gray, 1825)	not "purple-hinged rock scallop"
reddish scallop	*Chalmys rubida* (Hinds, 1845)	not "pink scallop"
weathervane scallop	*Patinopecten caurinus* (Gould, 1850)	
softshell	*Mya arenaria* Linnaeus, 1758	not "softshell clam"
surfclam, Arctic	*Mactromeris polynyma* (Stimpson, 1860)	not "surf clam"

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Common fish and shellfish–Page 2 of 4.

Common Name	Scientific Name	Notes
Crabs		
box crab, armed	*Mursia gaudichaudii* (H. Milne Edwards, 1837)	
hair crab	*Erimacrus isenbeckii* (Brandt, 1848)	not "Korean horsehair crab"
king crab		
blue king crab	*Paralithodes platypus* Brandt, 1850	
golden king crab	*Lithodes aequispinus* Benedict, 1894	not "brown king crab" or *L. aequispinus*
red king crab	*Paralithodes camtschaticus* (Tilesius, 1815)	
scarlet king crab	*Lithodes couesi* Benedict, 1894	
Dungeness crab	*Cancer magister* Dana, 1852	
snow crab	*Chionoecetes opilio* (Fabricius, 1788)	not "opi crab"
Tanner crab		
grooved Tanner crab	*Chionoecetes tanneri* Rathbun, 1893	avoid using "tanneri" by itself
Tanner crab	*Chionoecetes bairdi* Rathbun, 1924	
triangle Tanner crab	*Chionoecetes angulates* Rathbun, 1924	avoid using "angulatus" by itself
Echinoderms		
sea cucumber, red	*Parastichopus californicus*	
sea urchin		
green sea urchin	*Strongylocentrotus droebachiensis (*Müller, 1776*)*	
red sea urchin	*Strongylocentrotus franciscanus* (Agassiz, 1863)	
Shrimps		
coonstriped shrimp	*Pandalus hypsinotus* Brandt, 1851	
humpy shrimp	*Pandalus goniurus* Stimpson, 1860	
northern shrimp	*Pandalus borealis* Kroyer, 1838	not "pink shrimp" or *P. eous*
sidestriped shrimp	*Pandalopsis dispar* Rathbun, 1902	
spot shrimp	*Pandalus platyceros* Brandt, 1851	
Squids and Octopuses		
octopus, common	*Octopus vulgaris* Lamarck, 1798	
squid, opalescent inshore	*Loligo opalescens* S.S. Berry, 1911	
	Finfishes	
Esocids		
northern pike	*Esox lucius* Linnaeus, 1758	
Forage Fishes		
capelin	*Mallotus vollosus* (Müller, 1776)	
eulachon	*Thaleichthys pacificus* (Richardson, 1836)	
herring, Pacific	*Clupea pallasi* Valenciennes, 1874	not *C. harengus pallasi* or "herring" alone
longfin smelt	*Spirinchus thaleichthys* (Ayers, 1860)	
rainbow smelt	*Osmerus mordax* (Mitchell, 1814)	
	Groundfish/Miscellaneous	
cod, Pacific	*Gadus macrocephalus* (Tilesius, 1810)	

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Common fish and shellfish–Page 3 of 4.

Common Name	Scientific Name	Notes
	Groundfish/Miscellaneous (continued)	
flounder		
arrowtooth flounder	*Atheresthes stomias* (Jordan and Gilbert, 1880)	not "turbot"
starry flounder	*Platichthys stellatus* (Pallas, 1787)	
hake, Pacific	*Marcluccius productus* (Ayres, 1855)	not "whiting"
halibut, Pacific	*Hippoglossus stenolepis* Schmidt, 1904	
kelp greenling	*Hexagrammos decagrammus* (Pallas, 1810)	
lingcod	*Ophiodon elongatus* Girard, 1854	
ocean perch, Pacific	*Sebastes alutus* (Gilbert, 1890)	
Pacific sleeper shark	*Somniosus pacificus*	
pollock, walleye	*Theragra chalcogramma* (Pallas, 1814)	
Rockfish		
black rockfish	*Sebastes melanops* Girard, 1856	not "black bass"
canary rockfish	*Sebastes pinniger* (Gill, 1864)	
China rockfish	*Sebastes nebulosus* (Ayres, 1854)	
copper rockfish	*Sebastes caurinus* Richardson, 1844	
dusky rockfish	*Sebastes ciliatus* (Tilesius, 1810)	
tiger rockfish	*Sebastes nigrocinctus* (Ayres, 1859)	
quillback rockfish	*Sebastes maliger* (Jordan and Gilbert, 1880)	
silvergray rockfish	*Sebastes brevispinis* Bean, 1884	
vermillion rockfish	*Sebastes miniatus* (Jordan and Gilbert, 1880)	"red snapper"
yelloweye rockfish	*Sebastes ruberrimus* (Cramer 1895)	
yellowtail rockfish	*Sebastes flavidus* (Ayres, 1862)	
sablefish	*Anoplopoma fimbria* (Pallas, 1814)	not "blackcod"
salmon shark	*Lamna ditropis* Hubbs and Follett, 1947	
sole		
English sole	*Pleuronectes vetulus* (Girard, 1854)	
yellowfin sole	*Pleuronectes asper* Pallas, 1814	
rock sole	*Lepidopsetta bilineata* (Ayres, 1855)	
spiny dogfish	*Squalus acanthias* Linnaeu,s 1758	
tomcod, Pacific	*Microgadus tomcod* (Walbaum, 1792)	
	Salmon	
Chinook salmon	*Oncorhynchus tshawytscha* (Walbaum, 1792)	not "king salmon"
chum salmon	*Oncorhynchus keta* (Walbaum, 1792)	not "dog salmon"
coho salmon	*Oncorhynchus kisutch* (Walbaum, 1792)	not "silver salmon"
pink salmon	*Oncorhynchus gorbuscha* (Walbaum, 1792)	not "humpies"
sockeye salmon	*Oncorhynchus nerka* (Walbuam, 1792)	not "red salmon"; for landlocked use "kokanee"
	Trout	
char, Arctic	*Salvelinus alpinus* (Linnaeus, 1758)	
Dolly Varden	*Salvelinus malma* (Walbaum, 1792)	not "Dolly" or "Dollies"
brook trout	*Salvelinus fontinalis* (Mitchill, 1792)	
cutthroat trout	*Oncorhynchus clarki* (Richardson, 1836)	
lake trout	*Salvelinus namaycush* (Walbaum, 1792)	
rainbow trout	*Oncorhynchus mykiss* (Walbaum, 1792)	for sea run use "steelhead"
	Whitefish	
Bering cisco	*Coregonus laurettae* Bean, 1881	
broad whitefish	*Coregonus nasus* (Pallas, 1776)	
humpback whitefish	*Coregonus pidschian* (Gmelin, 1789)	
inconnu	*Stenodus leucichthys* (Guldenstadt, 1772)	(sheefish)
least cisco	*Coregonus sardinella* Valenciennes, 1848	
round whitefish	*Prosopium cylindraceum* (Pennant, 1784)	

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Common fish and shellfish–Page 4 of 4.

Common Name	Scientific Name	Notes
	Other Fish	
Arctic lamprey	*Lampetra camtschatica* (Tilesius, 1811)	
blackfish, Alaska	*Dallia pectoralis* Bean 1880	
burbot	*Lota lota (*Linnaeus, 1758)	
chub, lake	*Couesius plumbeus* (Agassiz, 1850)	
grayling, Arctic	*Thymallus arcticus* (Pallas, 1776)	not “grayling” alone
longnose sucker	*Catostomus catostomus* (Forster, 1773)	
slimy sculpin	*Cottus cagnatus* Richardson	
stickleback, threespine	*Gasterosteus aculeatus* Linnaeus, 1758	
stickleback, ninespine	*Pungitius pungitius* (Linnaeus 1758)	

SECTION I: HYPHENATION HELP

Use this guide only when you cannot find the spelling in the dictionary or in Section A of this manual. Determine the usage for the compound you are contemplating; noun, adjective, or verb. For nouns and adjectives, see below, for verbs and participles see Section 8 of the Gregg manual (Sabin 2005).

As an introduction to the suggestions for correct use of the hyphen, it should first be explained that the hyphen and the dash are distinct characters. A hyphen is used to compound, or to connect two commonly paired terms (e.g. fixed-wing plane). When two stem words support each other, a hyphen is used to create a common term. A dash, in contrast, is used to link two distinct terms of equal rank (e.g. cost–benefit analysis). The en dash is commonly used as an alternative to the word "to" when designating a range. In this construction (e.g. 1984–1975) the en dash is not preceded or followed by a space. The keyboard entry for an en dash is to hold down the Control key while entering the hyphen symbol on the number keypad.

Contemporary style minimizes hyphen use when unnecessary, and that is reflected here.

Nouns and Adjectives

Is the compound a noun or an adjective? For example (underlines denoting compounds), in the expression *positive level shifts*, vs. *positive level* modifying *shifts* or is *positive* modifying *level shifts*? In this chase the compound is a noun, *level shifts*, but in *level-shift outlier* the adjective *level shifts* is the hyphenated compound.

Group A: Typical

Hyphens connect many compound adjectives but not all (see Groups B-D). Hyphens are not used for compound nouns unless the noun is normally hyphenated (e.g.,*by-product, clerk-typist*).

Noun	Adjective
a gifted public orator	*a slow talking orator*
a bifurcated cross section	*cross-section diagram*
an expensive by-product	*a high-priced product*

Group B: Established Compound Nouns

In some cases, a compound adjective is an established compound noun (i.e., it stands alone as a well-known compound word). In keeping with the trend to avoid unnecessary hyphens, established compounds are not hyphenated, unless it would cause confusion:

Noun	Adjective
a large high school	*a high school diploma*
a federal income tax	*an income tax refund*
the high ebb tide	*an ebb tide sample*
targeted mixed stocks	*the mixed stock fishery*
the sea ducks were	*sea duck regulations*
in this time series	*the time series analysis*
the standing crop	*standing crop estimates*
common property	*a common property fishery*
each brood year	*brood year returns*
the continental shelf	*continental shelf break*
sea ice in	*sea ice edge*

A compound noun of this type is usually one that is found in the dictionary as a compound noun. However, if the compound is not in the dictionary but is a technical compound word commonly used by your audience, treat it as an established compound noun and drop the hyphen, unless it would cause confusion.

Group C: Meaning-Dependent

Some combinations can be read either way and the correct hyphen use is essential to the meaning:

Noun	Adjective
a long term assignment	*a long-term assignment*
(the term assignment is long)	*(the assignment is long term)*
large vessel catch	*large vessel catch*
(the vessel catch was large)	*(catch by large vessels)*

This sort of problem can occur with established compound nouns as well. Although this occurs infrequently, you still must be careful:

Compound Adjective	Compound Noun
high-school attendance[a]	*high school attendance*[a]
(attendance in high school)	*(high attendance at school)*
greater-scaup nesting [a]	*greater scaup nesting*[a]
(nesting by greater scaup)	*(greater nesting of scaup)*
small-game reserve [a]	*small game reserves*[a]
(reserves for small game)	*(small-sized game reserves)*

Group D: Irrelevant

This group is composed of word combinations in which the compound could be the noun or the adjective without affecting the meaning and without certainty as to which 2 words actually form the compound. For example: in the combination *fuel flow meter*, does *fuel* modify flow meter or does fuel flow modify *meter*? Either interpretation could be made and neither interpretation would affect the meaning. Therefore, in keeping with elimination of unnecessary, hyphens, the hyphenless option is recommended. A few more examples:

coded wire tag	*salmon run failures*
thermal mark code	*peak noise level*
smolt biomass production	*run timing information*
scale pattern analysis	*population model predictions*

For word groups like these, the hyphen is unnecessary and should usually be dropped; however, the hyphen can be added if the author or editor believes it would simplify reading. Once a decision is made, that decision should carry throughout the document and, if possible, in all other documents thereafter. Also, before dropping the hyphen, be sure the hyphen is truly irrelevant, i.e., it does not create a different meaning. For example, ocean age determination (regarding salmon) could be interpreted as determining the ocean's age, so it is probably better to include the hyphen (ocean-age determination).

[a] Although the usage format is technically necessary, the hyphenated forms look odd and the unhyphenated form probably would confuse your readers. Therefore, it would normally be better to avoid the confusion by rephrasing similar to the parenthetic explanation.

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